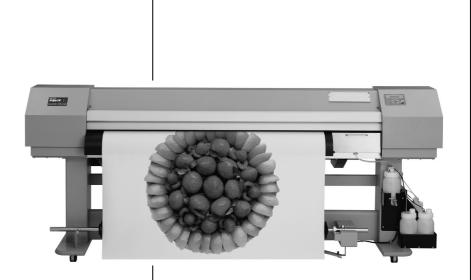
MUTOH

MAINTENANCE MANUAL

Grand-Format Inkjet Printer

PJ-1614NXE PJ-2216NXE



Read This Manual Before Using The Equipment.

Rev. PJ16E-M-00

Important Notice

This product has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the product is operated in a commercial environment.

This product generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the this manual, may cause harmful interference to radio communications. Operation of this product in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

1. Radio interfere

Product generates weak radio signals and may interfere with television reception and utilities. If a product does interfere with radio or TV reception, try following:

- Change the direction of your radio and TV reception antenna or feeder.
- Change the direction of the product
- Move either the product or the receiving antenna so there is more distance between them.
- Be sure the product and the receiving antenna are on separate power lines.
- 2. Trademark mentioned in this manual.
 - MUTOH, PJ-1614NXE, PJ-2216NXE, MH-RTL are registered trademarks or product names of MUTOH INDUSTRIES LTD.
 - Centronics and Bitronics are registered trademarks or product names of Centronics Data Computer Corporation.
 - Windows95, Windows98, Windows NT4.0, Windows2000, and MS-DOS are registered trademarks or product names of Microsoft Corporation.
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 publication free from error, but if you find any uncertainties or
 misprints, please call us or the shop where you bought this
 equipment.
- MUTOH INDUSTRIES LTD. shall not be liable for any damages or troubles resulting from the use of this equipment or this manual.

Warranty Limitations

- 1. MUTOH INDUSTRIES LTD. warrants part repair or replacement as a sole measure only if a failure is found in the system or in the materials and workmanship of the product the seller produced. However, if the cause of failure is uncertain, decide the action after due mutual consultation.
- 2. The warranty shall not apply to any direct or indirect loss, or compensation for the loss due to the product that has been subject to misuse, neglect, or improper alternation.

About This Manual

1. Purpose and target readers

This manual explains preparations needed before using and procedures for operations for MUTOH INDUSTRIAL LTD. Grand Format Inkjet Printer(PJ-1614NXE,PJ-2216NXE)

Use the built-in self-diagnostic program to locate a defective part and adjust/check during maintenance.

Before using this printer, first understand the contents and directions in this manual.

2. Manual configuration

Section	Contents
1 Safety Instructions	Explains types of warnings, cautions and warnings labeled on the printer for the both operators of the printer and maintenance personnel.
2 Product Overview	Explains the features, part names, and functions of the printer.
3 Specifications	Explains the specifications of the printer
4 Procedures of parts replacement	Explains the procedures of replacement and removal of the service parts of the printer.
5 Self diagnostic function	Explains the self diagnostic functions of the printer.
6 Maintenance mode	Explains the maintenance mode of the printer.
7 Adjustment	Explains the adjusting procedures of the printer parts.
8 Maintenance	Explains daily maintenance of the printer.
9 Troubleshooting	Explains troubles that may occur when using the printer and how to solve them.
10 Appendix	Explains the specifications, optional parts and supplies, installation procedures for optional parts, and user support for this printer.

NOTE

• Use the built-in self-diagnostic program to locate a defective part and adjust/check during maintenance.

3. Manual notation

The following symbols are used in this manual for easier understanding of the information.

Symbol	Meaning
♠ WARNING	Must be followed carefully to avoid death or serious injury
A CAUTION	Must be observed to avoid injury or damage to your equipment
NOTE	Contains important information and useful tips on the operation of your printer
TIP	Indicates useful tips for operating or understanding the printer
LF	Indicates referrence pages in this manual

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1 Safety Instructions

1.1 Introduction

This chapter explains the meaning of safety terms for personnel who operates this equipment, important safety instructions, and the positions of the warning labels.



Be sure to follow all instructions and warnings on this manual when installing the equipment.

1.2 Warnings, Cautions, and Notes

Safety terms in this manual and the contents of warning labels attached to the printer are categorized into the following three types depending on the degree of risk (or the scale of accident). Read the following explanations carefully, and follow the instructions in this manual.

Safety terms	Details
⚠ WARNING	Must be followed carefully to avoid death or serious bodily injury
CAUTION	Must be observed to avoid bodily injury (moderately or lightly) or damage to your equipment
NOTE	Contains important information and useful tips on the operation of your printer

1.3 Important safety instructions

General safety instructions that must be observed to use the equipment safely are explained below.

! WARNING

- Do not place the printer in the following areas. Doing so may result in the printer tipping or falling over and causing injury.
 - Angled place
 - Areas subject to vibration by other equipment
- Do not stand on or place heavy objects on your printer. Doing so may result in the printer tipping or falling over and causing injury.
- Do not cover the ventilation hole of your printer with cloth, such as a blanket or table cloth. Doing so could obstruct ventilation and cause fire.
- Do not place the printer away from humid and dusty areas. Doing so may result in electrical shock or fire.
- Insure that the following is performed before replacing parts.
 - Turn the power off of the printer.
 - Disconnect the power from the electric outlet.

Not doing so may cause electric shock or damage to the electric circuit.

• Unplug the cables connected to the printer.

Not doing so may cause the printer trouble.

A CAUTION

- Assembling and disassembling of the printer are possible only for the parts whose disassembling procedures are shown in the operation manual. Do not disassemble any frame parts or parts whose disassembling procedures are not shown in the manual.
 - Doing so may cause trouble that cannot be restored, as the printer is originally assembled in the factory with a high accuracy of 1/100 mm.
- Do not touch the elements on the circuit board with bare hands. Doing so may cause static electricity and break the elements.
- Do touch the nozzle of the print head. Be sure that the nozzle does not get any dust.
- There is some remaining ink in the tubes. Be careful that the ink is not spilled from the tube onto the printer or items close to the printer.
- If you need to operate the printer with the cover removed for maintenance, be careful not to get hurt by the moving parts.
- Do not oil the printer mechanism with oil other than that designated by MUTOH. Doing so may damage the parts or shorten the lifetime.
- If the power substrate assembly needs to be removed, disconnect the power cable and wait for at least 5 minutes before taking it out; this will discharge the residual electrical charge of the electrolytic capacitor.
 Touching the substrate before the capacitor discharges may cause electric shock.
- When connecting or disconnecting the FFC type cable from the connector of the main substrate assembly, be sure to connect or disconnect the cable straight out from the connector.
 Connecting or disconnecting at a slant angle may damage, break or shortcircuit the inner terminal of the connector. That may damage the elements on the substrate.
- When connecting or disconnecting the FFC type cable from the connector of the CR substrate, be sure to connect or disconnect the cable straight out from the connector.
 - Connecting or disconnecting at a slant angle may damage, break or short-circuit the inner terminal of the connector. That may damage the elements on the substrate.
- Perform adjustment of the capping position before using the printer.
 Otherwise it will cause dysfunctional performance of the printer such as cleaning being performed at the wrong position.
- Insure the following when performing cutter blade durability operation.
 - Install the usable ink cartridge.
 - Insure that media initialization is finished.
 - Performing the cutter blade durability operation with the ink cartridges unloaded may damage the printer as the cutter blade may be down outside of the cutting range.

- Insure the power of the printer is OFF before performing the parameter backup. Performing the parameter backup with the power ON may damage the main substrate or the data may not be properly installed.
- Insure the power of the printer is OFF before installing the firmware. Installing
 the firmware with the power ON may damage the main substrate assembly or
 the data may not be properly installed.
- Insure there is sufficient space around the printer when performing maintenance work.
- Maintenance must be done by more than one person for the following work.
 - When detaching the printer from the stand or attaching it.
 - When packing the printer for transportation.

1.4 Warning labels

The handling, attachment locations, and types of warning labels are explained below. Warning labels are attached to areas where care should be paid. Read and understand the positions and contents thoroughly before performing your work.

1.4.1 Handling the warning labels

Be sure to note the following when handling the labels.

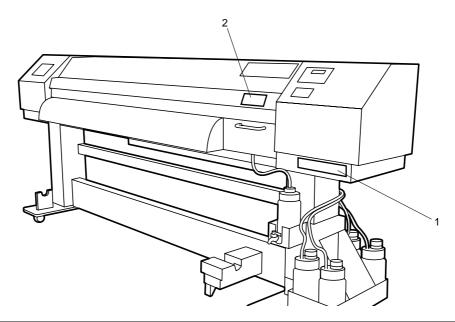
NOTE

- Make sure that all labels can be recognized. If text or illustrations cannot be seen clearly, either clean or replace the label.
- When cleaning labels, use a cloth with water or neutral detergent. Do not use a solvent or gasoline.
- If a warning label is damaged, lost, or cannot be recognized, replace the label.

1.4.2 Locations and types of warning labels

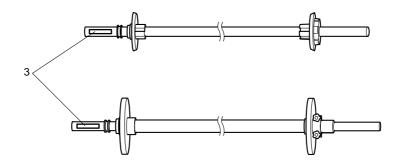
The locations of warning labels are shown below.

(1) Unit



No.	Туре
1	⚠ CAUTION
	◆Always use genuine, exclusive PJ-1614NX/PJ- 2216NX ink and jet wash.
	◆Always use exclusive PJ-1614NX/PJ-2216NX ink tanks, jet wash tanks and waste liquid tanks.
	If the user changes and uses the above, there is a risk of unpredictable problems such as ink blockage and deterioration of weatherability. Mutoh gives no warranty with respect to such problems.
2	
2	CAUTION VORSICHT ATTENTION
2	CAUTION VORSICHT ATTENTION ◆Do not open the front cover or touch the media during printting. This will result in poor image quality. ◆If no printting is to be done for some time, remove the media and set the hold lever in the up position. Otherwise the media may lift up or become wrinkled and you will not be able to obtain good printting results.
2	◆Do not open the front cover or touch the media during printting. This will result in poor image quality. ◆If no printting is to be done for some time, remove the media and set the hold lever in the up position. Otherwise the media may lift up or become wrinkled and you will not

(2) Scroller



No.	Туре					
3	CAUTION VORSICHT ATTENTION					
	◆To prevent the media unrolling, do not slant or stand the media scroller.					
	◆Bitte setzen Sie die Rollenhalterung nicht abschüseig oder aufrecht, sonst wird die Rollenmedia sich nicht entrollen.					
	◆Ne mettez pas l'axe rouleau en position verticale ou incliné, pour que le rouleau ne se déroule pas.					

2 PRODUCT OVERVIEW

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2 Product Overview

2.1 Introduction

This chapter explains the features, part names, and functions of the printer.

2.2 Features

The features of the printer are explained below.

(1) High speed output

Both models use a newly designed high-speed print head, with an improvement of up to 6 times the speed of previous models. Also, the PJ-1614NXE can print up to a maximum width of 1600mm, and the PJ-2216NXE can print up to a maximum of 2159mm in width.

(2) Outstanding weather resistance

With the specially developed solvent-type ink, the output product can last up to 3 years even without lamination. Not only is delivery time reduced, but total cost is reduced as well.

(3) Wide variety of compatible media

Because the height of the head can be adjusted, several types of media including 0.08-1.0 mm Terpolin, cloth, and marking film can be selected.

(4) Vibrant Color Reproduction

To reproduce clear and vibrant colors, the PJ-1614NXE uses 4 colors, and the PJ-2216NXE uses 6 colors. Both models uses 2000cc ink tanks, allowing continuous operation, and raising productivity.

(5) Effective usage of media

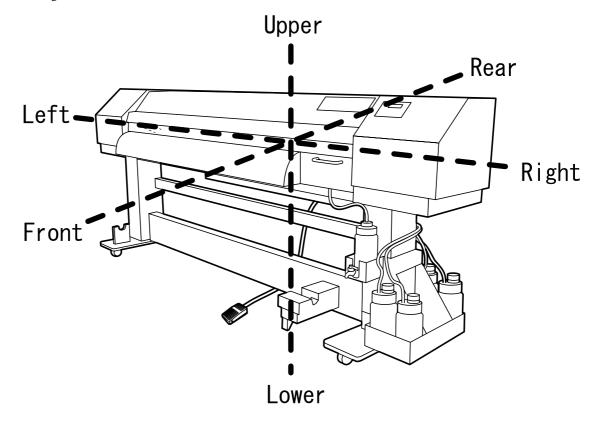
A JOG feature is provided to allow setting of the printing position as required. Because printing can be performed on media that has already been printed on, excess space can be used effectively.

2.3 Part names and functions

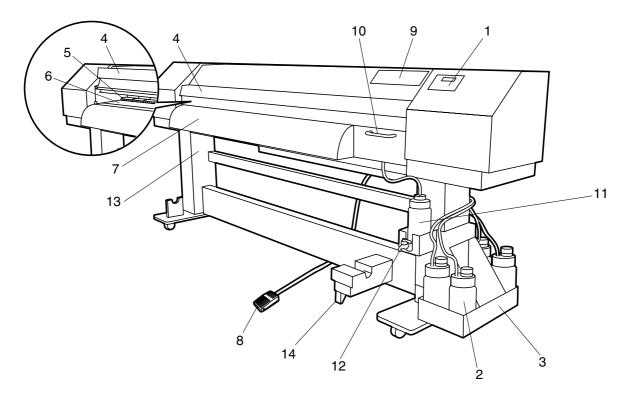
Part names and functions are explained below.

NOTE

• See the figure below for the direction in this manual.



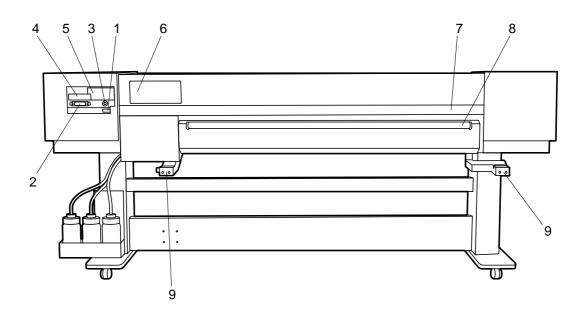
2.3.1 Front



No.	Name	Function
1	Operation panel	This panel is used to set operational conditions, the status of the printer, and other functions.
2	Main tank	Container for holding the ink and the jet wash fluid. The following are attached to the tank tray for each. • PJ-1614NXE: 5 bottles • PJ-2216NXE: 7 bottles
3	Tank tray	Used to attach the main tank to the product.
4	Front cover	This cover keeps the operator safe from the drive parts of the printer while it is operating. Open and/or close the cover only when performing the following operations.
		 Media setting and replacement Cutter blade replacement Clearing cleaning wiper media jamming
5	Pressurizing roller	This roller is used to press the media from above and keep it flat when printing.
6	Platen	Set inside the front cover. A heater for drying ink is built in. On the surface, there is a cutter groove for paper cutting.
7	Media guide	This is used to feed the media smoothly when setting the media and when printing. There is a ink drying device built in.
8	Foot switch	This switch is used to raise and lower the pressurizing roller.
9	Valve cover	This is a cover to protect the user from the internal components of the unit. It is opened when cleaning the print head or the sub-tank, and is normally closed.

No.	Name	Function
10	Maintenance cover	This is a cover to protect the user from the internal components of the unit. This is opened during the following conditions: • When turning the unit ON or OFF • When cleaning the print head surface. • When cleaning the print head Inside the cover, there is a waste fluid tray to collect waste fluid from the print head.
11	Waste fluid tank	A tank for storing waste fluids discharged from the product.
12	Waste fluid valve	Opened when discharging waste fluid from the waste fluid tank. This is normally closed.
13	Stand	This stand is used to install the printer on a surface flat floor.
14	Winding unit	Winds and collects the printed media.

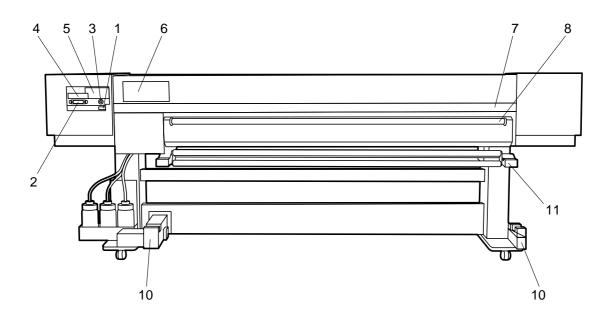
2.3.2 Rear section (PJ-1614NXE)



No.	Name	Function	
1	AC inlet	The power cable plug is inserted here.	
2	Interface connector	A connector to connect the centronic interface	
3	Foot switch connector	A connector to attach the foot switch cable	
4	Interface slot	The network interface board (option) attaches here. When not using the network interface, keep the cover closed.	
5	Hard disk slot	The hard disk (optional) attaches here. When not using a hard disk, keep the cover closed.	

No.	Name	Function
6	Ink filter cover	This cover protects the user from the internal components of the unit. There is an ink filter inside the cover. The cover is opened when changing the ink filter. This is normally closed.
7	Media feed slot	This is the media feed slot for placing the media during the media setting procedure.
8	Damper	Adjusts the tension of the media between the scroller and the media feed slot.
9	Scroller receiver	Loads the scroller when using the roll media.

2.3.3 Rear section (PJ-2216NXE)



No.	Name	Function	
1	AC inlet	The power cable plug is inserted here.	
2	Interface connector	A connector to connect the centronic interface.	
3	Foot switch connector	A connector to attach the foot switch cable.	
4	Interface slot	The network interface board (option) attaches here. When not using the network interface, keep the cover closed.	
5	Hard disk slot	The expansion hard disk optional) attaches here. When not using an expansion hard disk, keep the cover closed.	
6	Ink filter cover	This cover protects the user from the internal components of the unit. There is an ink filter inside the cover. The cover is opened when changing the ink filter. This is normally closed.	
7	Media feed slot	This is the media feed slot for placing the media during the media setting procedure.	
8	Damper	Adjusts the tension of the media between the scroller and the media feed slot.	

No.	Name	Function	
10	Feed unit	This is the device which sets the media when using roll media, and feeds it to the printing position.	
11	Tension Sensor	Detects the tension of the roll media	

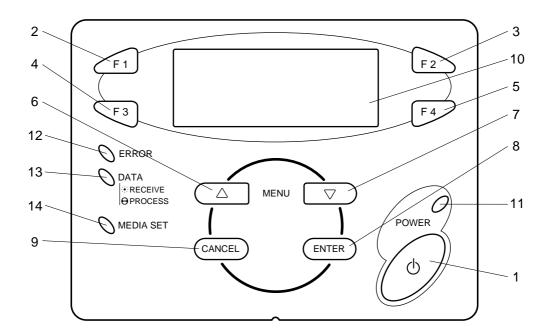
2.3.4 Operation panel

The operation panel is used to set operational conditions, display the status of the printer, and set other functions.

The names and functions of the operation keys and status lamps are explained below.



• Operation Manual



(1) Operation keys

NOTE

• Some keys have multiple functions and names depending on the printer status (normal or setup menu display). LB "2.4 Printer status"

No.	Name	Normal	setup menu display
1	[POWER] key	Turns the printer on and off.	Turns the printer on and off.
2	[F1] key	Executes the function assigned to F1.	Executes the function assigned to F1.
3	[F2] key	Executes the function assigned to F2.	Executes the function assigned to F2.
4	[F3] key	Executes the function assigned to F3.	Executes the function assigned to F3.
5	[F4] key	Executes the function assigned to F4.	Executes the function assigned to F4.
6	[MENU ▲] key	Changes the LCD monitor display to setup menu status.	Changes the menu in reverse order.
7	[MENU ▼] key	Changes the LCD monitor display to setup menu status.	Changes the menu in forward order.
8	[ENTER] key	-	Determines the new parameter value and changes the LCD monitor display to the next menu. Sets the parameter value and changes the LCD monitor display to the next menu.
9	[CANCEL] key	-	Cancels the new parameter value and changes the LCD monitor display to the next menu. Clears the parameter value and changes the LCD monitor display to the next menu.

(2) LCD monitor and status lamps

No.	Name	Color	Status	Function
10	LCD monitor	-	-	This monitor displays the operation status and error messages of the printer.
11	POWER lamp	Red	On	The printer is on.
			Off	The printer is off.
12	ERROR lamp	Red	Flashing	An error has occurred. The contents will be displayed on the LCD monitor.
			Off	Either there is no error in the printer or the power is off.
13	DATA lamp	Green	On	The printer is receiving print data.
			Flashing	The printer is analyzing received data.
			Off	The printer is waiting to receive print data.
14	MEDIA SET lamp	Green	On	The pressurizing roller is in the release position.Media is not set.
			Off	The pressurizing roller is in the secured position.The media is set.

2.4 Printer status

The status of the printer is explained below.

2.4.1 Normal

Indicates that the printer can draw print data when media is loaded. You can also make settings concerning printing using the operation panel.



2.4.2 Setup menu display

Indicates that you can make settings concerning printing using the operation panel. Operations for plotting can be conducted with the operation panel.



2.4.3 Self-diagnosis Function Display

Indicates that you can make settings concerning adjusting the printer using the operation panel. Keys of the operation panel have the same names and the functions as the display status of the setup menu.



2.4.4 Maintenance Mode Display

Indicate that you can make settings concerning the life of the printer. Keys of the operation panel have the same names and the functions as the display status of the setup menu.



18"6 Maintenance Manual"

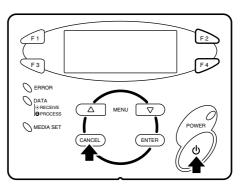
2.4.5 Selecting Language

This chapter explains how to select the language on the display. Follow the steps below to select the display language.

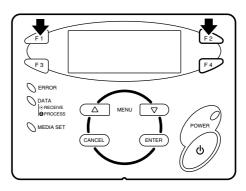


Japanese or English is selectable for the display language of the printer.

1. Press the [Power] key while pressing the [Cancel] key on the operation panel.



2. Press [F1] key or [F2] key on the operation panel to change and save the parameter.





3 SPECIFICATIONS

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<Memo>

3 Specifications

3.1 Introduction

This section explains the specifications, optional parts and supplies, installation procedures for optional parts, and user support for this printer.

3.2 Product Specifications

3.2.1 PJ-1614NXE Unit specifications

Item		Specifications
Model name		PJ-1614NXE
Printing method		Piezo inkjet
Drive method		Firmware servo/DC motor drive
Media feed method	[Multi-point pressure grid roller method
Media fixing metho	od	Pressurizing roller auto-down method
Media supply and d	lischarge	Back feeding/front paper discharge
Roll paper specifica	ations	External: 150mm(5.9in.) or less, weight 50kg(110Lbs.) or less.
Max. media width		1626mm(64.0in.)
Max. print width		1600mm(63.0in.)
printing margins		Front: 100mm, Back: 0-50mm, Left: 12.7mm, Right: 12.7mm
Media cut method		Manual cut
Head height adjustr	ment	Three levels: Low/Normal/High
CPU		64Bit RISC CPU,
Memory		64MB
Commands		MH-RTL (RTL-PASS)
Interface		Standard: bi-directional centronic method (IEEE1284 compliant; compatible, nibble, ECP mode) Optional: Network Interface
Ink	Supply method	Pump supply method from individual color tanks to a sub-tank. Supply from the tank to print head through ink weight using vacuum control.
	Ink Color	Maximum 4 colors (black, cyan, magenta, yellow)
	Tank Capacity	2000ml(0.52Gal.) for each color
Head life expectancy		10 billion dots or more per nozzle(in case of the sequence discharging under the condition of the temperature 25°C(77F) with no dust)

Item		Specifications
Environmental conditions	Operation environment	Temperature: 18°C(64.4F) to 32°C(89.6F), Humidity 30%-70%, without condensation
	Storage environment	Temperature: -10°C(14F) to 60°C(140F), Humidity 30%-70%, without condensation (with ink empty)
Power source	Voltage	AC100V-120V+/-10% / AC220V-240V +/-10% Automatic Switching
	Frequency	50Hz / 60Hz±1Hz
Fuze (F01, F02)	Fuze pipe dimension	φ10.31×38.1mm
	Voltage	250V
	Current	20A
Power consumption	When Printing	1100VA or less (when the heater is on)
	When in standby	200VA or less
Outer diameter dimensions	Height	1227mm(48.3in.)
	Width	3018mm(118.8in.)
	Depth	720mm(28.3in.)
Mass		228kg(50.3Lbs.)

3.2.2 PJ-2216NXE Unit specifications

Item	Specifications
Model name	PJ-2216NXE
Printing method	Piezo inkjet
Drive method	Firmware servo/DC motor drive
Media feed method	Multi-point pressure grid roller method
Media fixing method	Pressurizing roller auto-down method
Media supply and discharge	Back feeding/front paper discharge
Feed unit	Automatic/Manual
Roll paper specifications	External: 250mm(10.0in.) or less, weight 100kg(220Lbs.) or less.
Max. media width	2210mm(87.0in.)
Max. print width	2159mm(85.0in.)
printing margins	Front: 100mm, Back: 0-50mm, Left: 25.4mm, Right: 25.4mm
Media cut method	Manual cut
Head height adjustment	Three levels: Low/Normal/High
СРИ	64Bit RISC CPU,
Memory	128MB
Commands	MH-RTL (RTL-PASS)
Interface	Standard: bi-directional centronic method (IEEE1284 compliant; compatible, nibble, ECP mode) Optional: Network Interface

Item		Specifications
Ink Supply method		Pump supply method from individual color tanks to a sub-tank. Supply from the tank to print head through ink weight using vacuum control
	Ink Color	Maximum 6 colors (black, cyan, magenta, yellow, light cyan, light magenta)
	Tank Capacity	2000ml(0.52Gal.) for each color
Head life		10 billion dots or more per nozzle(in case of the sequence discharging under the condition of the temperature 25°C(77F) with no dust)
Environmental conditions	Operation environment	Temperature: 18°C(64.4F) to 32°C(89.6F), Humidity 30%-70%, without condensation
	Storage environment	Temperature: -10°C(14F) to 60°C(140F), Humidity 20%-80%, with no condensation (with ink empty)
Power source	Voltage	AC100V-120V+/-10% / AC220V-240V +/-10% Automatic Switching
	Frequency	50Hz/60Hz +/-1Hz Automatic switching
Fuze (F01, F02)	Fuze pipe dimension	φ10.31×38.1mm
	Voltage	250V
	Current	20A
Power consumption	When Printing	1400VA or less (when the heater is on)
	When in standby	200VA or less
Outer diameter	Height	1227mm(48.3in.)
dimensions	Width	3586mm(141.2in.)
	Depth	720mm(28.3in.)
mass		294kg(648Lbs.)

3.3 Interface Specifications

This section explains the specifications for the interfaces supported by this product.

3.3.1 Centronics Bidirection Parallel Interface:IEEE1284) Specifications

(1) Interface Specifications

Item	Specifications	
Transmission modes	Compatible , Nibble , ECP Mode	
Data length	3 bits	
Transmission direction	Unidirectional (receiving only), Bidirectional	
Connector pin number	36 19	

(2) Table of parallel interface pin numbers and signals

Pin number	Connection signal	Signal direction	Pin number	Connection signal	Signal direction
1	STROBE	To printer←	19	SG	
2	DATA1	To and from printer \longleftrightarrow	20	SG	
3	DATA2	To and from printer←→	21	SG	
4	DATA3	To and from printer \longleftrightarrow	22	SG	
5	DATA4	To and from printer←→	23	SG	
6	DATA5	To and from printer \longleftrightarrow	24	SG	
7	DATA6	To and from printer←→	25	SG	
8	DATA7	To and from printer \longleftrightarrow	26	SG	
9	DATA8	To and from printer \longleftrightarrow	27	SG	
10	ACK	From printer→	28	SG	
11	BUSY	From printer→	29	SG	

Pin number	Connection signal	Signal direction	Pin number	Connection signal	Signal direction
12	P ERROR	From printer→	30	SG	
13	SELECTED	From printer→	31	INIT	To printer←
14	AUTOFD	To printer←	32	FAULT	From printer→
15	Not connected		33	Not connected	
16	SG		34	Not connected	
17	FG		35	Not connected	
18	+5V		36	SELECTIN	To printer←

(3) Recommended centronics cable specifications

Item	Specifications	
Interface	Dual-direction Parallel Interface:IEEE1284	
Structure	AWG28×18 (twisted pair wiring)	
Shield construction	Metallic tape+weaving(double shielded cable)	
Characteristic impedance	62Ω	

3.3.2 Network Interface (Optional) Specifications

Item	Specifications			
NetWork Type	Ethernet IEEE802.3			
NetWork I/F	10 Base-T,100 Base-TX(automatic switching) (RJ-45 connector,twisted pair cable,category 5)			
Protocol	TCP/IP	NetWare(V3.1)	EtherTalk	
Mode	• ftp • lpr • socket • remote printer mode • print server • zone name			
Functions	Automatic protocol recognition Transmission speed up to 330 KB/s (differs according to networking environment) IP address and other settings are enabled by the accessory utility software (Printset) ageneral browser software		,	

3.4 Options/Supply list

3.4.1 Options

(1) Interface cable

Name	Model	Sales units
Centronics cable (3.6m/11.8ft)	PCT36	1 box (includes one set)

(2) Network interface

Name	Model	Sales units
Network interface board	RJ-ETH13TXEN	1 box (includes one set)

(3) Hard Disk

Name	Model	Sales units
Hard disk (20GB)	RJ2-HDD-ASSY	1 box (includes one set)

(4) Scroller

Name	Model	Sales units
Scroller 64inches (for PJ-1614NXE)	PJ2-SR64	1 box (includes one set)
Scroller 87inches (for PJ-2216NXE)	PJ2-SR87	1 box (includes one set)

3.4.2 Supply

(1) Supply Ink

Name	Model	Sales units
Supply ink K (Black)	PJ2-SOINK-BK	1 bottle (3.2L/ 1.0Gal.)
Supply ink C (Cyan)	PJ2-SOINK-CY	1 bottle (3.2L/ 1.0Gal.)
Supply ink M (Magenta)	PJ2-SOINK-MA	1 bottle (3.2L/ 1.0Gal.)
Supply ink Y (Yellow)	PJ2-SOINK-YE	1 bottle (3.2L/ 1.0Gal.)

Name	Model	Sales units
Supply ink Lc (Light Cyan)	PJ2-SOINK-LC	1 bottle (3.2L/ 1.0Gal.)
Supply ink Lm (Light Magenta)	PJ2-SOINK-LM	1 bottle (3.2L/ 1.0Gal.)
Jet wash fluid	PJ2-SOJW*5	1 bottle (5L/1.5Gal.)

(2) Roll media



For more information about the recommended media, contact MUTOH local leader.

(3) Other supply items

Name	Model	Sales units
Ink filter	PJ2-FILTER*2	1 box (2 filters per box)
Polynit wiper	PJ-POLYNITW	1box (300 sheets per box)

3.5 Conditions of the installation environment

! WARNING

- Do not install the printer at any of the following places. Doing so may cause the printer fall and injure people
 - Slanted place
 - Where vibration of other machines is transmitted.
- Do not sit on the printer or put heavy things on the printer. Doing so may cause the printer fall and injure people.
- Do not cover the printer with something like a blanket or a table cloth. That
 may cover the ventilation hole, confine the heat inside of the printer and cause
 fire.
- Do not install the printer in a damp or dusty place. Doing so may cause electric shock or fire.

(1) Conditions of the installation environment

Select the place to install the printer in accordance with "3-1 Conditions of the installation environment".

Table 3-1 Conditions of the installation environment

Installation area		5m ² or more, 2.6m or more is required for the width	
Floor strength of the installation place		2490Pa (300kgf/m²) or more	
Power	Voltage	AC 100V to 120V±10%	
specifications	Frequency	50/60Hz±1Hz	
	Capacity	10A or more	
Conditions of the environment		temperature	humidity
	Operational environment	10°C to 35°C	20% to 80%, No condensation is allowed.
	Guarantee range of the printing accuracy	15°C to 28°C	40% to 60%, No condensation is allowed.
	Change rate	2°C or less per hour	5% or less per hour

NOTE

- Avoid the following places with regard to the temperature or humidity; otherwise the printing result may be adversely affected:
 - Places where the temperature of humidity may rapidly change even though it is within the correct range.
 - Places where there is direct sunlight or strong light.
 - Places where there is direct air from the air conditioner.
- It is recommended that the printer be installed in an environment where the air conditioning is adjustable for temperature and humidity.

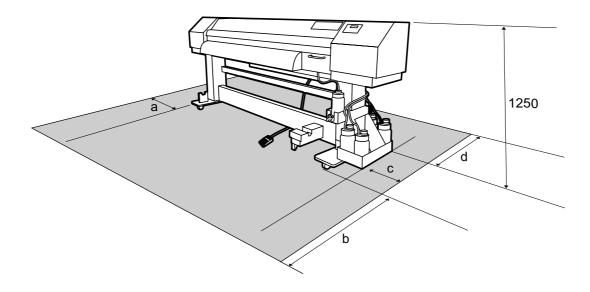
(2) Installation space

Install on a horizontal place that satisfies the following conditions.

• The floor has the sufficient strength to sustain the weight of the printer and the stand.



Refer to "3.2Product Specifications" for the weight of the printer and the stand.



3.6 Tube and Cable connection before powering ON.

! WARNING

 The unit is shipped with the tube between the print head and sub-tank, and thermostat signal cable removed. Make sure to connect the tube and cable before turning ON the power

For protection of the print head, this product is shipped with the tube between the head and sub tank removed.

Before turning the power ON, perform the instructions mentioned below to install the tube.

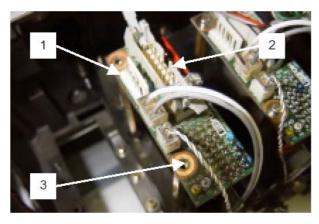
Step 1: Remove the following covers :

- Cover upper left
- Cover upper right
- Y rail cover
- Front cover
- Carriage cover-1
- ➤ Carriage cover –2

Step 2: Remove the following cables:

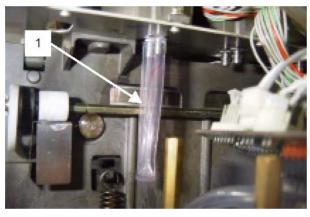
- Head heater cable assy
- Head cable assy

Step 3: Remove the screws that is holding the head circuit board assy to remove the board.



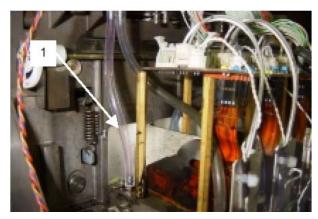
- 1 = Head heater cable assy
- 2 = Head cable assy
- 3 = HEAD circuit board assy

Step 4: Remove the sub tank protection tube that is connected to he sub tank.



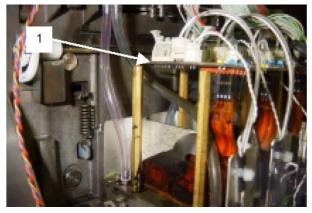
1 = Sub tank protection tube

- **Step 5 :** Remove the pin that is plugging the tube coming from the head. Note that when removing the pin be careful, because jetwash can spurt out. Make sure not to spill jetwash onto the HEAD circuit board.
- **Step 6:** Attach the tube to the connector of the sub tank. Make sure there are no bends in the tube.



1 = tube

Step 7: Install the head circuit board assy and plug in the cables.



1 = HEAD circuit board assy

Step 8: Repeat step 2 to step 7 for the other print heads.

Step 9: Reinstall the covers.

NOTE

Perform the adjustment of the print heads.

3 Specifications	PJ-1614NXE PJ-2216NXE Maintenance Manual

4 PART REPLACEMENT

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4 Part Replacement

4.1 Introduction

This chapter provides information on removal and replacement of service parts.



Before starting part replacement, always perform the following operations.

- Turn OFF the machine power.
- Disconnect the power plug from the outlet.
 Otherwise, you may suffer electric shock or the system circuit may be damaged.
- Disconnect any cables connected to the machine. Otherwise, the machine may malfunction.



The components in the machine can be disassembled only if so instructed in this manual. The frame components and other components that are not mentioned as serviceable in the manual shall not be disassembled.

The machine has been assembled in our factory with extremely high precision up to 1/100mm. If disassembled inappropriately, it may not restore its normal functionality.

NOTE

After replacing any parts, perform necessary lubrication and bonding following the instructions in section "8.4 Lubrication/Bonding".

4.2 Removal of Covers

Before replacing any parts in the machine, you must remove some external covers. This section describes the procedure to remove the covers.

Table 4-1 Cover Component List

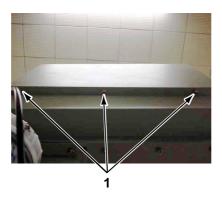
No.	Part name
1	Side cover R
2	Side cover L
3	Front cover

Table 4-1 Cover Component List (Continued)

No.	Part name
4	Panel cover
5	Y-axis rail cover
6	Paper guide F
7	Paper guide R
8	Head cover
9	Pump cover

4.2.1 Removing Side Cover R

1. Remove the three front screws from the side cover R lower.



No.	Part name
1	Front screw in side cover R lower (M4×8)

2. Remove the three right screws from the side cover R lower.



No.	Part name
1	Right screws in side cover R lower (M4×8)

3. Remove the three rear screws from the side cover R lower.



	No.	Part name
Ī	1	Rear screws in side cover R lower (M4×8)

- 4. Remove the side cover R upper.
- 5. Replace necessary parts inside the machine.
- 6. To install the removed components, reverse the removal procedure.

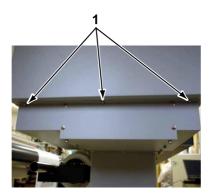
4.2.2 Removing Side Cover L

1. Remove the three front screws from the side cover L lower.



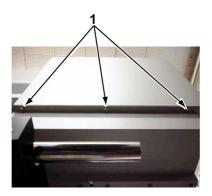
No.	Part name
1	Front screw in side cover L lower (M4×8)

2. Remove the three left screws from the side cover L lower.



No.	Part name
1	Left screws in side cover L lower (M4×8)

3. Remove the three lower screws from the side cover L lower.



No.	Part name
1	Lower screws in side cover L lower (M4×8)

- 4. Remove the side cover L upper.
- 5. Replace necessary parts inside the machine.
- 6. To install the removed components, reverse the removal procedure.

4.2.3 Removing Front Cover

- 1. Open the front cover.
- 2. Remove the left and right screws (four) of the cover shaft and the E ring.





No.	Part name
1	Left/right screw of cover shaft (M3×8)
2	E ring

3. Pull out the cover shaft L.



No.	Part name
1	Cover shaft L

- 4. Slide and remove the front cover.
- 5. Replace necessary parts inside the machine.
- 6. To install the removed components, reverse the removal procedure.

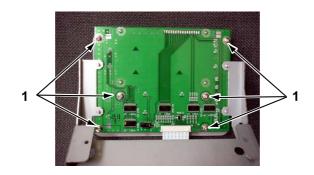
4.2.4 Replacing Panel Board Assembly

- 1. Remove the side cover R upper.
- 2. Detach the panel tape wires from the main board.
- 3. Remove the two panel bracket-retaining screws.



No.	Part name
1	Panel bracket-retaining screw (M3×8)

- 4. Remove the panel bracket.
- 5. Remove the six screws retaining the panel board assembly to the panel cover.



No.	Part name
1	Screw retaining panel board assembly to panel cover (M3×8)

- 6. Remove the panel cover.
- 7. Remove the four screws retaining the panel board assembly to the panel bracket.



No.	Part name
1	Screw retaining panel board assembly to panel bracke (M3×8)

8. Remove the panel board assembly.

4.2.5 Removing Y-axis rail cover

- 1. Remove the side cover R.
- 2. Remove the side cover L.
- 3. Remove the front cover.
- 4. Remove the six front screws from the Y-axis rail cover.



No.	Part name
1	Front screw of Y-axis rail cover (M4×8)

5. Remove the five rear screws from the Y-axis rail cover.



If your machine is an 87-inch model, the Y-axis rail cover has seven rear screws.



No.	Part name
1	Rear screw of Y-axis rail cover (M3×8)

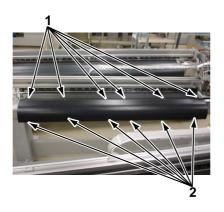
- 6. Remove the Y-axis rail cover.
- 7. Replace necessary parts inside the machine.
- 8. To install the removed components, reverse the removal procedure.

4.2.6 Removing Paper Guide F

- 1. Remove the side cover L.
- 2. Remove the side cover R.
- 3. Remove the front cover.
- 4. Remove the Y-axis rail cover.
- 5. Remove the 12 screws from the paper guide F.



If your machine is an 87-inch model, the paper guide F has 16 screws.

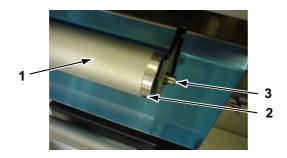


No.	Part name
1	Screw for paper guide F (M3×6)
2	Screw for paper guide F (M3×8)

- 6. Remove the paper guide F.
- 7. Replace necessary parts inside the machine.
- 8. To install the removed components, reverse the removal procedure.

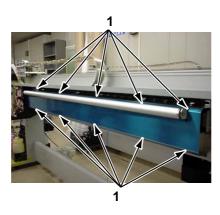
4.2.7 Removing Paper Guide R

- 1. Remove the side cover L
- 2. Remove the side cover R.
- 3. Remove the front cover.
- 4. Remove the Y-axis rail cover.
- 5. Remove the two screws retaining the right end of the cushion roller.
- 6. Detach the right end of the cushion roller shaft.
- 7. Remove the cushion roller.



No.	Part name
1	Cushion roller
2	Retaining screw
3	Cushion roller shaft

- 8. Remove the five upper screws from the paper guide R.
 - If your machine is an 87-inch model, the paper guide R has six upper screws.

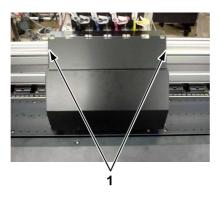


No.	Part name
1	Paper guide R screw (M4×8)

- 9. Remove the five rear screws from the paper guide R.
 - If your machine is an 87-inch model, the paper guide R has six rear screws.
- 10. Remove the paper guide R.

4.2.8 Removing Head Cover

- 1. Remove the side cover R.
- 2. Remove the side cover L.
- 3. Remove the front cover.
- 4. Remove the Y-axis rail cover.
- 5. Move the head leftward.
- 6. Remove the two carriage cover 2-retaining screws.



No.	Part name
1	Carriage cover 2-retaining screw (M3×6)

- 7. Remove the carriage cover 2.
- 8. Remove the two carriage cover 1-retaining screws.

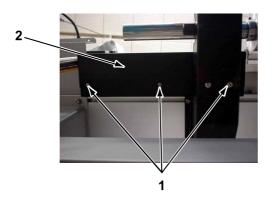


No.	Part name
1	Carriage cover 1-retaining screw (M3×6)

- 9. Remove the carriage cover 1.
- 10. Replace necessary parts inside the machine.
- 11. To install the removed components, reverse the removal procedure.

4.2.9 Removing Pump Cover

1. Remove the three lower screws from the pump cover.



No.	Part name			
1	Pump cover lower screw (M3×6)			
2	Pump cover			

2. Remove the four front screws from the pump cover.

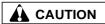


No.	Part name
1	Pump cover front screw (M3×6)
2	Pump cover

- 3. Remove the pump cover.
- 4. Replace necessary parts inside the machine.
- 5. To install the removed components, reverse the removal procedure.

4.3 Replacement of Board Assemblies

This section describes the procedures to replace the SUB board assembly, MAIN board assembly, POWER A board assembly and POWER B board assembly.



Do not touch any devices on the circuit boards with a bare hand. Doing so may cause electrostatic discharge and damage the devices.

4.3.1 Replacing SUB Board Assembly

1. Disconnect the connectors shown in the table below from the SUB board assembly.



 When connecting and disconnecting the FFC type cables to/from the SUB board assembly connectors, always pull or push the cables perpendicularly.
 Pulling or pushing them slantwise may damage/short/break the terminals in the connectors, resulting in breakdown of the on-board devices.

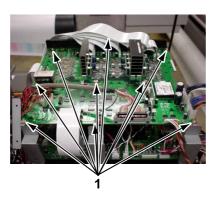
Table 4-2 Connectors to SUB Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J001	14	White	POWER A board	Lock type
2	J002	10	White	POWER B board	Lock type
3	J003	40	White	MAIN board	Lock type
4	J004	40	White	MAIN board	Lock type
5	J005	40	White	MAIN board	Lock type
6	J006	30	White	CR_BASE board	Lock type
7	J007	30	White	CR_BASE board	Lock type
8	J008	30	White	CR_HEAD board	Lock type
9	J009	30	White	CR_HEAD board	Lock type
10	J010	30	White	CR_HEAD board	Lock type
11	J011	30	White	CR_HEAD board	Lock type
12	J012	30	White	CR_HEAD board	Lock type
13	J013	30	White	CR_HEAD board	Lock type
16	J016	2	White		
17	J017	2	White		

No.	Connector No.	# of pins	Colo r	Connect to	Remark
18	J018	8	White		
17	J019	16	White	Blower fan	
18	J020	12	White	POWER B board	
19	J021	30	White	TERM_POMP board	Lock type
20	J022	8	White	Thermister	
21	J023	9	White	Thermister	
22	J024	40	White	TERM_TANK	Lock type

Table 4-2 Connectors to SUB Board Assembly (Continued)

- 2. Remove the nine SUB board assembly-retaining screws.
- 3. Replace the SUB board assembly



No.	Part name
1	SUB board assembly-retaining screw (M3×6)

4. To install the removed components, reverse the removal procedure.

4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

- 1. Remove the SUB board assembly following the instructions in "4.3.1 Replacing SUB Board Assembly".
- 2. Replace DIMM.
- 3. Disconnect the connectors shown in the table below from the MAIN board assembly.



 When connecting and disconnecting the FFC type cables to/from the MAIN board assembly connectors, always pull or push the cables perpendicularly.
 Pulling or pushing them slantwise may damage/short/break the terminals in the connectors, resulting in breakdown of the on-board devices.

Table 4-3 Connectors to MAIN Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J101	12	White	POWER A board	Lock type
2	J102	6	White	POWER A board	Lock type
3	J103	10	White	POWER A board	
4	J104	9	White	POWER B board	
5	J105	50	White		
6	J106	50	White		
7	J107	168	White		
8	J108	68	White		
9	J109	28	White	Operation panel	Lock type
10	J110	3	Yello w		
11	J112	64	White		
12	J113	96	White	MOTHER board	
13	J114	36	White	HDD_MOTHER board	
14	J115	5	Red		
15	J116	4	White	Sensor board(DE-49845)	
16	J117	4	Blue	Sensor board(DF-42624)	
17	J118	4	Black	GPIS74P	
18	J119	5	Yello w		
19	J120	4	Yello w	GPIS74P	
20	J121	4	Red	GPIS74P	
21	J122	5	Blue	Foot switch	
22	J123	40	White	SUB board	Lock type
23	J124	5	Black		
24	J125	40	White	SUB board	Lock type
25	J126	40	White		Lock type
26	J127	2	White	X-axis motor	Lock type
27	J128	3	White	SS-5GL13-F	

J134

33

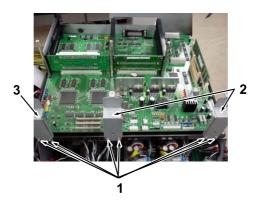
No.	Connector No.	# of pins	Colo r	Connect to	Remark
28	J129	3	Black		
29	J130	3	Red	SS-5GLF	
30	J131	3	White	Y-axis motor	Lock type
31	J132	5	White	Encoder board	
32	J133	4	White	Encoder board	Lock type

White Slide motor

Table 4-3 Connectors to MAIN Board Assembly (Continued)

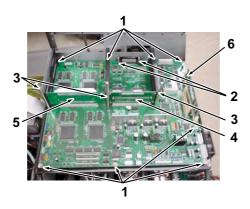
4. Remove the six screws retaining the SUB board stay A and the SUB board stay B.

6



No.	Part name
1	Screw retaining SUB board stay A and SUB board stay B (M3×8)
2	SUB board stay A
3	SUB board stay B

- 5. Remove the SUB board stay A and SUB board stay B.
- 6. Remove the eight MAIN board assembly-retaining screws and the three spacers.



No.	Part name
1	Screw retaining MAIN board assembly (M3×6)
2	Screw retaining MAIN board assembly (M3×8)

No.	Part name
3	Spacer
4	HDD_MOTHER board assembly
5	MOTHER board assembly
6	DIMM

- 7. Remove the MAIN board assembly, DIMM, MOTHER board assembly, and HDD_MOTHER board assembly.
- 8. To install the removed components, reverse the removal procedure.

4.3.3 Replacing POWER A Board Assembly, POWER B Board Assembly, DC Power Supply Assemblies



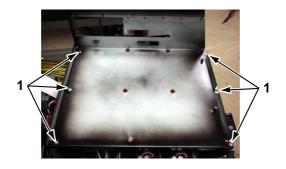
Before removing the POWER A board assembly, POWER B board assembly, or DC power supply assemblies, always disconnect the power cable and wait for 5 minutes or more to discharge residual electric charge in the capacitors. If you handle these boards before the capacitor charge is fully discharged, you may suffer electric shock.

(1) Replacing POWER B board assembly



Before replacing the POWER B board assembly, you must remove the DC power supply assemblies. To remove the DC power supply assemblies, refer to "(3) Replacing DC power supply assemblies".

- 1. Remove the MAIN board assembly following the instructions in "4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly".
- 2. Remove the six screws retaining the MAIN board base.



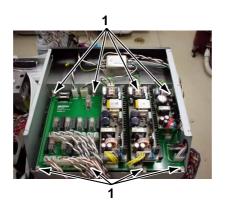
No.	Part name
1	Screw retaining MAIN board base (M3×8)

- 3. Remove the MAIN board base.
- 4. Disconnect the following connectors from the POWER B board assembly.

Table 4-4 Connectors to POWER B Board Assembly

No.	Connector No.	# of pins.	Colo r	Connect to	Remark
1	J1	2	White	AC inlet	Lock type
2	J2	3	White	Noise filter	Lock type
3	Ј3	9	White	MAIN board	
4	J4	12	White	SUB board	
5	J5	10	White	SUB board	Lock type
6	J6	5	White	ZWS100PF-48/J	Lock type
7	J7	8	White	ZWS100PF-48/J	Lock type
8	Ј8	5	White	ZWS100PF-48/J	Lock type
9	J9	8	White	ZWS100PF-48/J	Lock type
10	J10	5	White	ZWS30-24/J	Lock type
11	J11	4	White	ZWS30-24/J	Lock type
12	J12	2	White	Cooling fan	
13	J20	4	White	Heater	Lock type
14	J21	4	White	Heater	Lock type
15	J22	4	White	Heater	Lock type
16	J23	4	White	Heater	Lock type
17	J30	4	White	Heater	Lock type
18	J31	4	White	Heater	Lock type
19	J32	4	White	Heater	Lock type
20	J33	4	White	Heater	Lock type

5. Remove the eight POWER B board assembly-retaining screws.



No.	Part name
1	POWER B board assembly-retaining screw (M3×6)

- 6. Replace the POWER B board assembly.
- 7. To install the removed components, reverse the removal procedure.

(2) Replacing POWER A board assembly



Before replacing the POWER A board assembly, you must remove the DC power supply assemblies. To remove the DC power supply assemblies, refer to "(3) Replacing DC power supply assemblies".

- 1. Remove the POWER B board assembly following the instructions in "(1) Replacing POWER B board assembly".
- 2. Disconnect the following connectors from the POWER A board assembly.

Table 4-5 Connectors to POWER A Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J1	2	White	AC inlet	Lock type
2	J2	4	White	Noise filter	Lock type
3	Ј3	3	White	Noise filter	Lock type
4	J4	10	White	MAIN board	
5	J5	12	White	MAIN board	Lock type
6	J6	6	White	MAIN board	Lock type
7	J7	14	White	SUB board	Lock type
8	Ј8	2	White	Cooling fan	
9	J9	5	White	ZWS5-5J	Lock type
10	J10	4	White	ZWS5-5J	Lock type
11	J11	5	White	ZWS50-5J	Lock type
12	J12	4	White	ZWS50-5J	Lock type
13	J13	5	White	ZWS50-12/J	Lock type
14	J14	4	White	ZWS50-12/J	Lock type
15	J15	5	White	ZWS150PF-24/J	Lock type
16	J16	7	White	ZWS150PF-24/J	Lock type
17	J17	6	White	ZWS150PF-24/J	Lock type
18	J18	5	White	ZW75PF-48/J	Lock type
19	J19	6	White	ZW75PF-48/J	Lock type
20	J20	4	White		

3. Remove the eight POWER A board assembly-retaining screws.

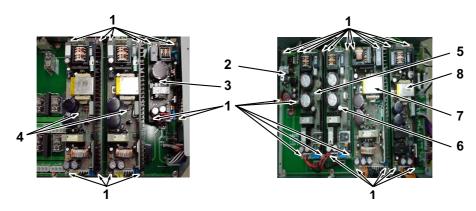


No.	Part name
1	POWER A board assembly-retaining screw (M3×6)

- 4. Replace the POWER A board assembly.
- 5. To install the removed components, reverse the removal procedure.

(3) Replacing DC power supply assemblies

- 1. Disconnect the connectors from the respective DC power supply assemblies.
- 2. Remove the screws retaining the respective DC power supply assemblies (32 screws).



No.	Part name
1	DC power supply assembly-retaining screw (M3×6)
2	Power supply (5V/5W)
3	Power supply (24V/30W)
4	Power supply (48V/100W)
5	Power supply (5V/50W)
6	Power supply (12V/50W)
7	Power supply (24V/150W)
8	Power supply (48V/75W)

- 3. Replace the respective DC power supply assemblies.
- 4. To install the removed components, reverse the removal procedure.

4.4 Replacement of PF Driving Section Components

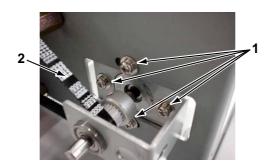
4.4.1 Replacing PF Motor Assembly

NOTE

Before replacing parts of the PF motor assembly, remove the following covers.

Side cover R: \[\textstyle \]"4.2.1 Removing Side Cover R"

- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 12 "4.2.5 Removing Y-axis rail cover"
- 1. Remove the PF motor assembly connector from the PF motor cable assembly.
- 2. Remove the two screws retaining the X-axis motor bracket to the side of the side frame L.



No.	Part name
1	Screws retaining X-axis motor bracket to side of the side frame L, screw retaining PF motor assembly to X-axis motor bracket (M3×6)
2	PF speed reduction belt

- 3. Remove the two screws retaining the PF motor assembly to the X-axis motor bracket.
- 4. Replace the PF motor assembly.

NOTE

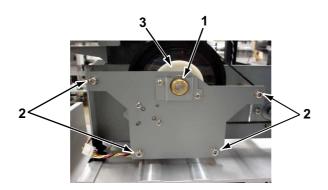
- When installing the PF motor assembly, ensure that the PF speed reduction belt is evenly guided along the PF motor assembly pulley by moving the PF speed reduction pulley by hand.
- 5. To install the removed components, reverse the removal procedure.
- 6. Perform adjustment following the instructions in "3.2 Product Specifications".

4.4.2 Replacing PF_ENC Assembly and PF Scale Assembly

NOTE

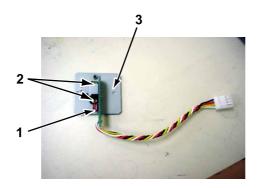
Before replacing parts of the PF_ENC assembly, remove the following covers.

- Side cover R: 18"4.2.1 Removing Side Cover R"
- Side cover L: L'3" "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13"4.2.5 Removing Y-axis rail cover"
- 1. Disconnect the PF_ENC assembly connector.
- 2. Remove the bearing.
- 3. Remove the four screws retaining the PF scale bracket.



No.	Part name
1	Bearing
2	PF scale bracket-retaining screw (M3×6)
3	PF scale

- 4. Remove the PF scale bracket.
- 5. Remove the PF scale assembly.
- 6. Remove the screws retaining the PF_ENC assembly to the PF encoder bracket.



No.	Part name
1	PF_ENC assembly
2	Screw retaining PF_ENC assembly to PF encoder bracket. (M2×6)
3	PF encoder bracket

- 7. Replace the PF_ENC assembly.
- 8. To install the removed components, reverse the removal procedure.

4.4.3 Replacing P_REAR_R sensor assembly

NOTE

Before replacing the P_REAR_R sensor assembly, remove the following covers.

- Side cover R: TF "4.2.1 Removing Side Cover R"
- Side cover L: \[\] "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13 "4.2.5 Removing Y-axis rail cover"
- Paper guide R: 13"4.2.7 Removing Paper Guide R"
- 1. Remove the P_REAR_R sensor assembly connector from the MAIN board assembly.
- 2. Remove the one screw retaining the paper sensor bracket.



No.	Part name
1	Paper sensor bracket
2	Paper sensor bracket-retaining screw (M3×8)

- 3. Remove the paper sensor bracket.
- 4. Remove the two screws retaining the P_REAR_R sensor assembly.



No.	Part name
1	P_REAR_R sensor assembly
2	P_REAR_R sensor assembly -retaining screw (M2×5)

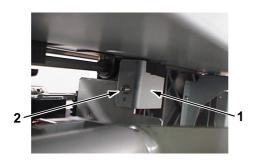
- 5. Replace the P_REAR_R sensor assembly.
- 6. To install the removed components, reverse the removal procedure.

4.4.4 Replacing Lever Motor Assembly

NOTE

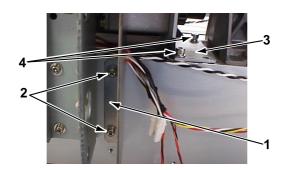
Before replacing the lever motor, remove the following covers.

- Side cover R: \[\] "4.2.1 Removing Side Cover R"
- Side cover L: \[\mathbb{E} "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13 "4.2.5 Removing Y-axis rail cover"
- Paper guide R: \[\mathbb{E} "4.2.7 Removing Paper Guide R"
- 1. Disconnect the lever motor assembly connector.
- 2. Remove the one screw retaining the sensor bracket.



No.	Part name
1	Sensor bracket
2	Sensor bracket-retaining screw (M3×8)

- 3. Remove the sensor bracket.
- 4. Remove the two screws retaining the R cover L.



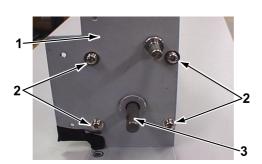
No.	Part name
1	R cover L
2	R cover L-retaining screw (M4×8)
3	Arm motor bracket
4	Hexagon screw

- 5. Remove the two hexagon screws retaining the arm motor bracket.
- 6. Remove the arm motor bracket.
- 7. Remove the E ring retaining the intermediate gear.



No.	Part name
1	Intermediate gear
2	E ring
3	Driving gear
4	Retaining screw

- 8. Remove the intermediate gear.
- 9. Remove the one screw retaining the driving gear.
- 10. Remove the driving gear.
- 11. Remove the 4 screws retaining the lever motor.



No.	Part name
1	Arm motor bracket
2	Lever motor-retaining screw (M4×8)
3	Lever motor

- 12. Replace the lever motor.
- 13. To install the removed components, reverse the removal procedure.

4.4.5 Replacing Heater and Thermister Assembly

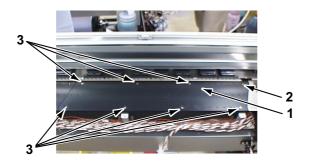
NOTE

Before replacing the heater and thermister assembly, remove the following covers.

- Side cover R: \[\] "4.2.1 Removing Side Cover R"
- Side cover L: \[\begin{aligned} \begin{alig
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13" "4.2.5 Removing Y-axis rail cover"

(1) Replacing heater and thermister assembly (platen side)

- 1. Remove the following screws retaining the plmainaten.
 - Screw (M3×8): 1
 - Platen-retaining screw: 7



No.	Part name
1	Platen
2	Screw retaining platen (M3×8)
3	Platen-retaining screw

2. Disconnect the heater connector.

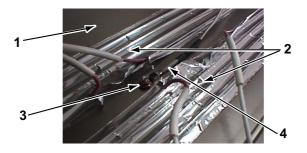


No.	Part name
1	Platen
2	Heater
3	Hexagon nut
4	Thermister assembly

- 3. Using a circuit tester, identify which heater is broken.
- 4. Replace the broken heater.
- 5. Disconnect the thermister assembly connector.
- 6. Remove the hexagon nut retaining the thermister assembly.
- 7. Replace the thermister assembly.
- 8. To install the removed components, reverse the removal procedure.

(2) Replacing heater and thermister assembly (Paper guide F side)

1. Remove the paper guide F following the instructions in "4.2.6 Removing Paper Guide F".



No.	Part name
1	Paper guide F
2	Heater
3	Hexagon nut
4	Thermister assembly

- 2. Disconnect the heater connector.
- 3. Using a circuit tester, identify which heater is broken.
- 4. Replace the broken heater.
- 5. Disconnect the thermister assembly connector.
- 6. Remove the hexagon nut retaining the thermister assembly.
- 7. Replace the thermister assembly.

8. To install the removed components, reverse the removal procedure.

4.4.6 Replacing Transmission Type Photo Sensor

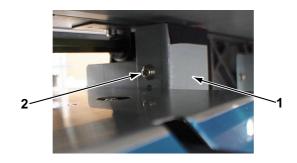
NOTE

Before replacing the transmission type photo sensor, remove the following covers.

- Side cover R: \[\begin{aligned} \begin{alig
- Side cover L: \[\mathbb{E} "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13" "4.2.5 Removing Y-axis rail cover"

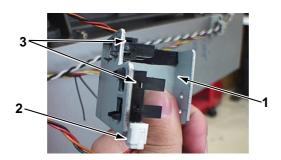
(1) Replacing transmission type photo sensor (Lever motor side)

1. Remove the one screw retaining the sensor bracket.



No.	Part name
1	Sensor bracket
2	Sensor bracket-retaining screw (M3×8)

- 2. Remove the sensor bracket.
- 3. Remove the transmission type photo sensor from the sensor bracket.

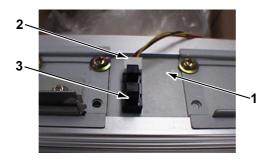


No.	Part name
1	Sensor bracket
2	Connector
3	Transmission type photo sensor

- 4. Disconnect the connector from the transmission type photo sensor.
- 5. Replace the transmission type photo sensor.
- 6. To install the removed components, reverse the removal procedure.

(2) Replacing transmission type photo sensor (CR origin side)

- 1. Move the carriage leftward from the capping position.
- 2. Remove the transmission type photo sensor from the ORG sensor bracket.



No.	Part name
1	ORG sensor bracket
2	Connector
3	Transmission type photo sensor

- 3. Disconnect the connector from the transmission type photo sensor.
- 4. Replace the transmission type photo sensor.
- 5. To install the removed components, reverse the removal procedure.

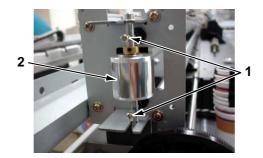
4.5 Replacement of Y-axis Driving System Components

4.5.1 Replacing Steel Belt

NOTE

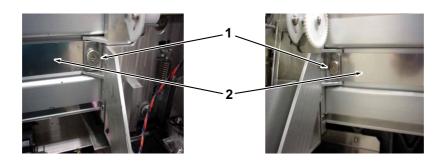
Before replacing the steel belt, remove the following covers.

- Side cover R: \[\mathbb{E} "4.2.1 Removing Side Cover R"
- Side cover L: \[\begin{aligned} \begin{alig
- Front cover: 13"4.2.3 Removing Front Cover"
- Y-axis rail cover: 13" "4.2.5 Removing Y-axis rail cover"
- 1. Loosen the two steel belt-adjusting screws.



No.	Part name
1	Steel belt-adjusting screw
2	Steel belt

2. Remove the two steel belt-retaining screws.



No.	Part name
1	Steel belt-retaining screw
2	Steel belt

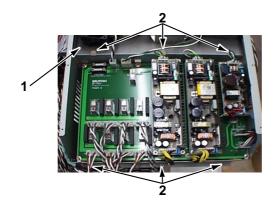
- 3. Replace the steel belt.
- 4. To install the removed components, reverse the removal procedure.
- 5. Perform adjustment following the instructions in "3.2 Product Specifications".

4.5.2 Replacing CR Motor Assembly

NOTE

Before replacing parts of the CR motor assembly, remove the following covers.

- Side cover R: 13"4.2.1 Removing Side Cover R"
- Side cover L: "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13" 4.2.5 Removing Y-axis rail cover"
- 1. Disconnect the CR motor assembly connector from the MAIN board assembly.
- 2. Pull out the CR motor assembly wire harness.
- 3. Move the carriage leftward from the capping position.
- 4. Remove the steel belt following the instructions in "4.5.1 Replacing Steel Belt".
- 5. Remove the MAIN board assembly following the instructions in "4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly".
- 6. Remove the MAIN board assembly base.
- 7. Disconnect the connectors from the POWER B board assembly.
- 8. Remove the six screws retaining the power supply stay.
- 9. Remove the power supply stay.



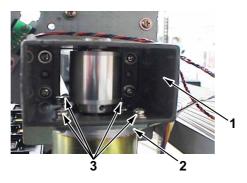
No.	Part name
1	Steel belt-retaining screw
2	Steel belt

10. Remove the four screws retaining the Y-axis motor bracket.



No.	Part name
1	Screw retaining Y-axis motor bracket (M4×8)
2	Y-axis motor bracket

- 11. Remove the Y-axis motor bracket.
- 12. Remove the four screws retaining the CR motor assembly to the Y-axis motor bracket and the CR motor bracket.



No.	Y-axis motor bracket
1	Y-axis motor bracket
2	CR motor bracket
3	Screw retaining CR motor assembly to Y-axis motor bracket and CR motor bracket (M4×8)

13. Replace the CR motor assembly.

NOTE

- When installing the CR motor assembly, ensure that the steel belt is evenly guided along the CR motor assembly pulley by moving the carriage left and right by hand.
- 14. To install the removed components, reverse the removal procedure.

4.5.3 Replacing SLID Motor Assembly



Before replacing parts of the SLID motor assembly, remove the following covers.

- Side cover R: 18"4.2.1 Removing Side Cover R"
- Side cover L: 12"4.2.2 Removing Side Cover L"
- Front cover: 13" "4.2.3 Removing Front Cover"
- Y-axis rail cover: 18"4.2.5 Removing Y-axis rail cover"
- 1. Disconnect the SLID motor assembly connector from the MAIN board.
- 2. Remove the two screws retaining the SLID motor assembly.



No.	Part name
1	SLID motor assembly
2	Screw retaining SLID motor assembly (M3×6)

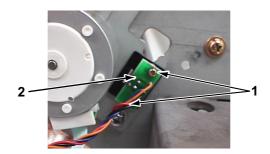
- 3. Replace the SLID motor assembly.
- 4. To install the removed components, reverse the removal procedure.

4.5.4 Replacing HD_SLIDE Sensor Assembly

NOTE

Before replacing parts of the HD_SLIDE sensor assembly, remove the following covers.

- Side cover R: 12"4.2.1 Removing Side Cover R"
- Side cover L: \[\begin{aligned} \begin{alig
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13" "4.2.5 Removing Y-axis rail cover"
- 1. Disconnect the HD_SLID sensor assembly connector from the MAIN board assembly.
- 2. Remove the screw retaining the HD_SLID sensor assembly.
- 3. Replace the HD_SLID sensor assembly.



No.	Part name
1	HD_SLID sensor assembly
2	Screw retaining HD_SLID sensor assembly (M2×8)

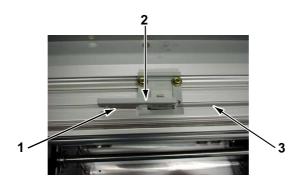
4. To install the removed components, reverse the removal procedure.

4.5.5 Replacing T Fence

NOTE

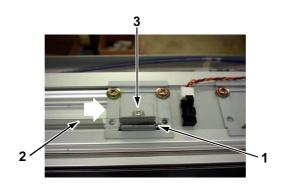
Before replacing the T fence, remove the following covers.

- Side cover R: \[\] "4.2.1 Removing Side Cover R"
- Side cover L: 工管 "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 13"4.2.5 Removing Y-axis rail cover"
- 1. Detach the T fence from the T fence spring hook located at the side frame L.



No.	Part name
1	T fence spring
2	T fence spring hook
3	T fence

2. Remove the one screw from the T fence bracket.

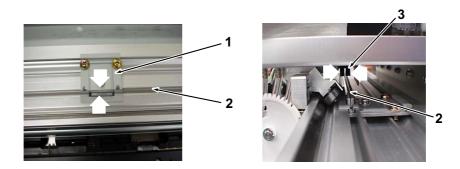


No.	Part name
1	T fence bracket
2	T fence
3	T fence bracket screw (M3×6)

- 3. Detach the T fence from the hook and pull it in the direction of the arrow in the figure.
- 4. Replace the T fence.

NOTE

- When installing the T fence, make sure to follow the instructions below.
 - Correctly attach the T fence to the hook on the T fence bracket referring to the figure for step 2.
 - Referring to the following figure, insert the T fence in the T fence push plate and CR_ENC assembly.



No.	Part name
1	T fence push plate
2	T fence
3	CR_ENC assembly

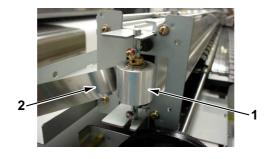
5. To install the removed components, reverse the removal procedure.

4.5.6 Replacing CR Driven Pulley

NOTE

Before replacing the CR driven pulley, remove the following covers.

- Side cover R: "4.2.1 Removing Side Cover R"
- Side cover L: LB"4.2.2 Removing Side Cover L"
- Front cover: 13"4.2.3 Removing Front Cover"
- Y-axis rail cover: 13 "4.2.5 Removing Y-axis rail cover"
- 1. 4.5.1 Replacing Steel BeltRemove the steel belt following the instructions in "4.5.1 Replacing Steel Belt".
- 2. Replace the CR driven pulley.



No.	Part name
1	CR driven pulley
2	Steel belt

3. To install the removed components, reverse the removal procedure.



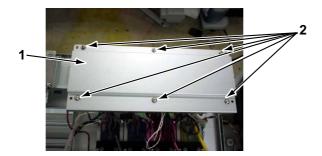
- The driven pulley shaft fits only in one orientation. Ensure that it is oriented correctly referring to "10.6 Exploded View"
- After installing the CR driven pulley, always ensure that the steel belt is evenly guided along the CR motor assembly pulley by moving the carriage left and right by hand.
- 4. Perform adjustment following the instructions in "3.2 Product Specifications".

4.5.7 Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube

NOTE

Before replacing the steel bearer and tube guide, remove the following covers.

- Side cover L: \(\mathbb{E}\)"4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 12"4.2.5 Removing Y-axis rail cover"
- 1. Remove the six screws retaining the wire holder.



No.	Part name
1	Wire holder
2	Screw retaining wire holder (M3×8)

- 2. Remove the CR tape wire from the CR-BASE board assembly and SUB board assembly.
- 3. Remove the two screws retaining the steel bearer.



No.	Part name
1	Steel belt
2	Steel belt-retaining screw, tube holder 2-retaining screw (M3×8)
3	Cable holder 2
4	Tube holder 2

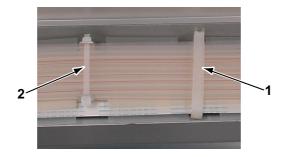
- 4. Remove the two screws retaining the cable holder 2.
- 5. Remove the one screw retaining the tube holder 2.
- 6. Remove the intake tube from the mini fitting.





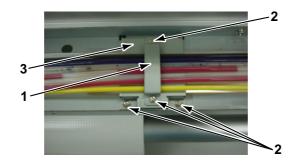
No.	Part name
1	Ink tube
2	Mini fitting

7. Remove all cable clamps and tie wraps.



No.	Part name
1	Cable clamp
2	Tie wrap

8. Remove the two screws retaining the tube holder1.



No.	Part name
1	Tube holder 1
2	Tube holder 1-retaining screw, cable holder1-retaining screw (M3×8)
3	Cable holder1

- 9. Remove the two screws retaining the cable holder1.
- 10. Replace the ink tube.
- 11. Replace the tube guide.
- 12. Replace the CR tape wire.
- 13. Replace the steel bearer.
- 14. To install the removed components, reverse the removal procedure.

4.5.8 Replacing Cover R Sensor Assembly and Cover L Sensor Assembly

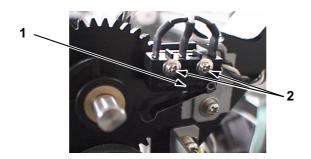
NOTE

Before replacing the cover R sensor assembly and cover L sensor assembly, remove the following covers.

- Side cover R: "4.2.1 Removing Side Cover R"
- Side cover L: \[\mathbb{E} "4.2.2 Removing Side Cover L"
- Front cover: \[\mathbb{T} "4.2.3 Removing Front Cover"
- Y-axis rail cover: 12" "4.2.5 Removing Y-axis rail cover"

(1) Replacing cover R sensor assembly

- 1. Disconnect the cover R sensor assembly connector from the MAIN board assembly.
- 2. Remove the two screws retaining the cover R sensor assembly.
- 3. Replace the cover R sensor assembly.



No.	Part name
1	Cover R sensor assembly
2	Screw retaining cover R sensor assembly (M2×10)

4. To install the removed components, reverse the removal procedure.

(2) Replacing cover L sensor assembly

1. Disconnect the cover L sensor assembly connector



No.	Part name
1	Connector
2	Screw retaining cover L sensor assembly (M2×12)
3	Cover L sensor assembly

- 2. Remove the two screws retaining the cover L sensor assembly.
- 3. Replace the cover L sensor assembly.
- 4. To install the removed components, reverse the removal procedure.

4.6 Replacement of Head Components

4.6.1 Replacing HEAD Board Assembly

NOTE

Before replacing the HEAD board assembly, remove the following covers.

- Side cover R: \[\] "4.2.1 Removing Side Cover R"
- Front cover: 12" "4.2.3 Removing Front Cover"
- Y-axis rail cover: 12 "4.2.5 Removing Y-axis rail cover"
- 1. Disconnect the connectors from the HEAD board assembly.
- 2. Remove the two screws retaining the HEAD board assembly.



No.	Part name
1	HEAD board assembly
2	HEAD board assembly-retaining screw (M3×6)

- 3. Replace the HEAD board assembly.
- 4. To install the removed components, reverse the removal procedure.

4.6.2 Replacing Head Assembly



While working, exercise extreme caution not to touch the head nozzles or contaminate them with foreign objects.

NOTE

Before replacing the head assembly, remove the following covers.

- Side cover R: 13"4.2.1 Removing Side Cover R"
- Side cover L: L'3 "4.2.2 Removing Side Cover L"
- Front cover: 13" 4.2.3 Removing Front Cover"
- Y-axis rail cover: 13"4.2.5 Removing Y-axis rail cover"
- Carriage cover: 13" "4.2.8 Removing Head Cover"
- 1. Perform ink purge to discharge ink from all ink lines.



下"5.5.10 Head Cleaning Menu"

- 2. Move the carriage leftward from the capping position.
- 3. Remove the HEAD board assembly following the instructions in "4.6.1 Replacing HEAD Board Assembly".
- 4. Remove the two tubes



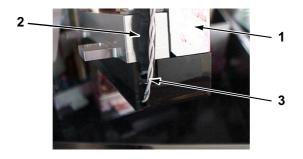
No.	Part name
1	Tube
2	Head assembly
3	Head assembly-retaining screw (M3×6)

- 5. Remove the three screws retaining the head assembly.
- 6. Remove the head assembly by pushing it rearward.
- 7. Replace the head assembly.
- 8. To install the removed components, reverse the removal procedure.
- 9. Perform adjustment following the instructions in "3.2 Product Specifications".

4.6.3 Replacing Cartridge Heater and Thermister

NOTE

- Before replacing the cartridge heater and thermister, remove the following covers.
 - Side cover R: 13" 4.2.1 Removing Side Cover R"
 - Side cover L: \[\begin{aligned} \begin{alig
 - Front cover: "4.2.3 Removing Front Cover"
 - Y-axis rail cover: 13" "4.2.5 Removing Y-axis rail cover"
 - Carriage cover: 13" 4.2.8 Removing Head Cover"
- 1. Remove the head assembly following the instructions in "4.6.2 Replacing Head Assembly".
- 2. Cut the tie wrap that bundles the thermister cable to the cartridge heater.
- 3. Remove the cartridge heater and thermister from the head assembly.



No.	Part name
1	Head assembly
2	Cartridge heater
3	Thermister

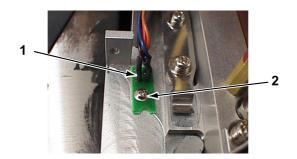
- 4. Replace the cartridge heater and thermister.
- 5. To install the removed components, reverse the removal procedure.
- 6. Perform adjustment following the instructions in "3.2 Product Specifications"

4.6.4 Replacing P_EDGE Sensor Assembly

NOTE

Before replacing the P_EDGE sensor assembly, remove the following covers.

- Side cover R: 18"4.2.1 Removing Side Cover R"
- Side cover L: L'3" "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"
- Y-axis rail cover: 128"4.2.5 Removing Y-axis rail cover"
- Carriage cover: 12"4.2.8 Removing Head Cover"
- 1. Disconnect the P_EDGE sensor assembly connector from the CR_BASE board assembly.
- 2. Remove the one screw retaining the P_EDGE sensor assembly.



No.	Part name
1	P_EDGE sensor assembly
2	P_EDGE sensor assembly-retaining screw (M2×6)

- 3. Replace the P_EDGE sensor assembly.
- 4. To install the removed components, reverse the removal procedure.

4.7 Replacement of Cursor Section Components

Before replacing the cursor section components, always perform ink purge to discharge ink from all ink lines.



For the details on the ink purge operation, refer to "5.5.10 Head Cleaning Menu".

4.7.1 Replacing Sub Tank Assembly

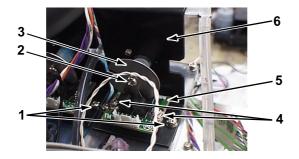
This section explains the procedures to replace the VALVE_SENSE board assembly, three-way Valve(hand), sub tank assembly, cartridge heater, and thermister.

NOTE

- Before replacing the sub tank assembly components, remove the following covers.
 - Side cover R: 13"4.2.1 Removing Side Cover R"
 - Side cover L: "4.2.2 Removing Side Cover L"
 - Front cover: "4.2.3 Removing Front Cover"
 - Y-axis rail cover: 4.2.5 Removing Y-axis rail cover
 - Carriage cover: 12"4.2.8 Removing Head Cover"

(1) Replacing three-way Valve(hand) and VALVE_SENSE board assembly

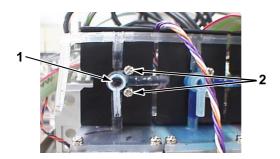
- 1. Disconnect the connectors from the VALVE_SENSE board assembly.
- 2. Disconnect the tubes from the three-way Valve(hand).
- 3. Remove the two screws retaining the Valve bracket.



No.	Part name
1	Valve bracket-retaining screw (M3×12)
2	Screw retaining Valve position-indicating plate (tapping screw M3×6)

No.	Part name
3	Valve position-indicating plate
4	Screw retaining VALVE_SENSE board assembly (round head screw with nut M3×6)
5	VALVE_SENSE board assembly
6	Valve bracket

- 4. Remove the one screw retaining the Valve position-indicating plate.
- 5. Remove the Valve position-indicating plate.
- 6. Remove the two screws retaining the VALVE_SENSE board assembly.
- 7. Replace the VALVE_SENSE board assembly.
- 8. Remove the two screws retaining the three-way Valve(hand).

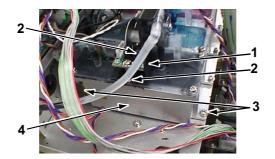


No.	Part name
1	three-way Valve(hand)
2	three-way Valve(hand)-retaining screw (M3×16)

- 9. Replace the three-way Valve(hand).
- 10. To install the removed components, reverse the removal procedure.

(2) Replacing sub tank assembly

- 1. Remove the three-way Valve(hand) and VALVE_SENSE board assembly following the instructions in "(1) Replacing three-way Valve(hand) and VALVE_SENSE board assembly".
- 2. Remove the two screws retaining the Valve bracket.



No.	Part name
1	Valve bracket
2	Valve bracket-retaining screw (M3×12)
3	Sub tank assembly-retaining screw (M3×8)
4	Sub tank assembly

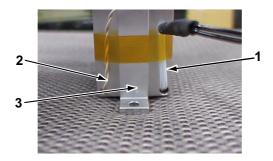
- 3. Disconnect the tubes from the sub tank assembly.
- 4. Remove two screws retaining the sub tank assembly.
- 5. Replace the sub tank assembly.
- 6. To install the removed components, reverse the removal procedure.



When replacing the sub tank, do not lose the polyacetal spacers.

(3) Replacing cartridge heater and thermister

- 1. Remove the sub tank assembly following the instructions in "(2) Replacing sub tank assembly".
- 2. Disconnect the cartridge heater and thermister connectors from the CR_BASE board assembly.
- 3. Remove the cartridge heater and thermister from the sub tank assembly.



No.	Part name
1	Cartridge heater
2	Thermister
3	Sub tank assembly

- 4. Replace the cartridge heater and thermister.
- 5. To install the removed components, reverse the removal procedure.

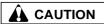
4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly

1. Remove the six screws retaining the wire holder.



No.	Part name
1	Wire holder
2	Wire holder-retaining screw (M3×8)

2. Disconnect the connectors shown in the following table from the CR_HEAD board assembly.



 When connecting and disconnecting the FFC type cables to/from the CR_HEAD board assembly connectors, always pull or push the cables perpendicularly.
 Pulling or pushing them slantwise may damage/short/break the terminals in the connectors, resulting in breakdown of the on-board devices.

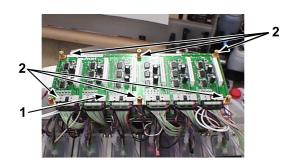
Table 4-6 Connectors to CR_HEAD Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J1	30	White	SUB board	Lock type
2	J2	16	White	HEAD board	

Colo # of pins No. Connector No. Connect to Remark r J3 30 White SUB board 3 Lock type **J**4 4 16 White HEAD board J5 30 SUB board 5 White Lock type 6 J6 16 White HEAD board J7 30 White SUB board 7 Lock type 16 White HEAD board 8 J8 J9 30 White SUB board 9 Lock type J10 16 White HEAD board 10 30 J11 White SUB board 11 Lock type HEAD board 12 J12 16 White

Table 4-6 Connectors to CR_HEAD Board Assembly (Continued)

3. Remove the six brass spacers retaining the CR_HEAD board assembly.



No.	Part name
1	CR_HEAD boardAssy
2	Brass spacer

- 4. Replace the CR_HEAD board assembly.
- 5. Disconnect the connectors shown in the following table from the CR_BASE board assembly.



 When connecting and disconnecting the FFC type cables to/from the CR_BASE board assembly connectors, always pull or push the cables straightforwardly.
 Pulling or pushing them slantwise may damage/short/break the terminals in the connectors, resulting in breakdown of the on-board devices.

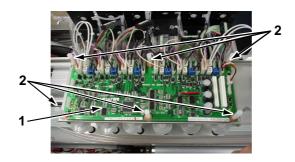
Table 4-7 Connectors to CR_BASE Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J001	30	White	SUB board	Lock type
2	J002	30	White	SUB board	Lock type
3	J003	5	White		
4	J004	4	White	Sensor board	
5	J005	5	White	Encoder board	
6	J006	6	White		
7	J010	8	White	INK_SENSE board	
8	J011	2	blue	Three-way solenoid valve	
9	J012	5	White	VALVE_SENSE board	
10	J013	2	White	Thermister	
11	J014	3	White	Cartridge heater	
12	J015	6	White	HEAD board	
13	J020	8	White	INK_SENSE board	
14	J021	2	blue	Three-way solenoid valve	
15	J022	5	White	VALVE_SENSE board	
16	J023	2	White	Thermister	
17	J024	3	White	Cartridge heater	
18	J025	6	White	HEAD board	
19	J030	8	White	INK_SENSE board	
20	J031	2	blue	Three-way solenoid valve	
21	J032	5	White	VALVE_SENSE board	
22	J033	2	White	Thermister	
23	J034	3	White	Cartridge heater	
24	J035	6	White	HEAD board	
25	J040	8	White	INK_SENSE board	
26	J041	2	Blue	Three-way solenoid valve	
27	J042	5	White	VALVE_SENSE board	
28	J043	2	White	Thermister	
29	J044	3	White	Cartridge heater	
30	J045	6	White	HEAD board	
31	J050	8	White	INK_SENSE board	
32	J051	2	Blue	Three-way solenoid valve	
33	J052	5	White	VALVE_SENSE board	
34	J053	2	White	Thermister	
35	J054	3	White	Cartridge heater	
36	J055	6	White	HEAD board	

No.	Connector No.	# of pins	Colo r	Connect to	Remark
37	J060	8	White	INK_SENSE baord	
38	J061	2	Blue	Three-way solenoid valve	
39	J062	5	White	VALVE_SENSE board	
40	J063	2	White	Thermister	
41	J064	3	White	Cartridge heater	
42	J065	6	White	HEAD board	

Table 4-7 Connectors to CR_BASE Board Assembly (Continued)

- 6. Remove the six polyacetal spacers retaining the CR_BASE board assembly.
- 7. Replace the CR_BASE board assembly.



No.	Part name
1	CR_BASE board assembly
2	Polyacetal spacer

8. To install the removed components, reverse the removal procedure.

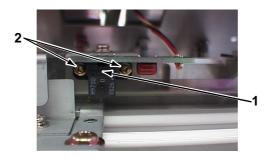
4.7.3 Replacing CR_ENC Assembly

- 1. Disconnect the CR_ENC assembly connector from the CR_BASE board assembly.
- 2. Remove either of the center sub tank assemblies following the instructions in "4.7.1Replacing Sub Tank Assembly".
 - If your machine is an 87-inch model, you must also remove the sub tank assemblies at the both ends.
- 3. Remove the connectors from the HEAD board assembly.
- 4. Remove the four screws retaining the CR board bracket.



No.	Part name
1	CR board bracket
2	CR board bracket-retaining screw (M3×8)
3	Sub tank assembly

5. Lift the CR board bracket and remove the two CR_ENC assembly-retaining screws by accessing them from the back.



No.	Part name
1	CR_ENC assembly
2	CR_ENC assembly-retaining screw (M2×12)

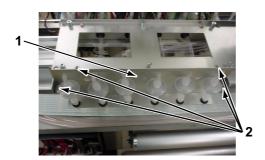
- 6. Replace the CR_ENC assembly.
- 7. To install the removed components, reverse the removal procedure.

NOTE

When removing the CR_ENC assembly, exercise extreme caution not to damage the T fence.

4.7.4 Replacing Three-way Valve

- 1. Remove the CR_BASE board assembly following the instructions in "4.7.2Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly".
- 2. Remove the four screws retaining the filter bracket.



No.	Part name
1	Filter bracket
2	Filter bracket-retaining screw (M3×8)

- 3. Slide the filter bracket backward.
- 4. Disconnect the tubes from the three-way valve.
- 5. Remove the sub tank assembly located in front of the three-way valve to be replaced following the instructions in "4.7.1Replacing Sub Tank Assembly".
 - If your machine is an 87-inch model, you must also remove the sub tank assemblies at the both ends.
- 6. Remove the four screws retaining the CR board bracket.
- 7. Lift the CR board bracket.
- 8. Remove the two screws retaining the three-way valve.



No.	Part name
1	Three-way valve

No.	Part name
2	Three-way valve-retaining screw (M3×5)

- 9. Replace the three-way valve.
- 10. To install the removed components, reverse the removal procedure.

4.7.5 Replacing CR Cursor Assembly

- 1. Remove all head assemblies following the instructions in "4.6.2 Replacing Head Assembly".
- 2. Remove the P_EDGE sensor assembly following the instructions in "4.6.4 Replacing P_EDGE Sensor Assembly".
- 3. Remove the steel belt following the instructions in "4.5.1 Replacing Steel Belt".
- 4. Remove the CR_ENC assembly following the instructions in "4.7.3 Replacing CR_ENC Assembly".
- 5. Lift the CR board bracket and head assembly together.
- 6. Remove the two CR blade springs.



No.	Part name
1	CR blade spring
2	CR cursor assembly

- 7. Replace the CR cursor assembly.
- 8. To install the removed components, reverse the removal procedure.

4.7.6 Replacing Cursor Roller

- 1. Remove the CR cursor assembly following the instructions in "4.7.5 Replacing CR Cursor Assembly".
- 2. Remove the one E ring retaining the cursor roller.



No.	Part name
1	Cursor roller, E ring

- 3. Replace the cursor roller.
- 4. To install the removed components, reverse the removal procedure.

4.8 Replacement of Ink Supply Section Components



Before replacing a component of the ink supply section, remove the pump cover.

• Larua Removing Pump Cover"

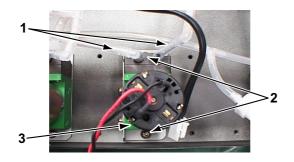
Before replacing a component of the ink supply section, perform ink purge to discharge ink from all ink lines.



"5.5.10 Head Cleaning Menu"

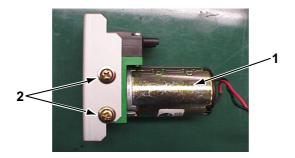
4.8.1 Replacing Ink Pump

- 1. Disconnect the ink pump connector from the TERM_PUMP board assembly.
- 2. Disconnect the tubes from the ink pump.



No.	Part name
1	Tube
2	Pump bracket-retaining screw (M3×5)
3	Pump bracket

- 3. Remove the two screws retaining the pump bracket.
- 4. Remove the pump bracket.
- 5. Remove the two screws retaining the ink pump.

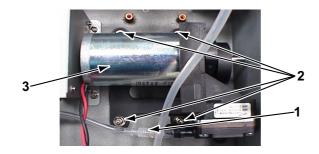


No.	Part name
1	Ink pump
2	Ink pump-retaining screw (M3×5)

- 6. Replace the ink pump.
- 7. To install the removed components, reverse the removal procedure.

4.8.2 Replacing Air Pump

- 1. Disconnect the air pump connector from the TERM_PUMP board assembly.
- 2. Remove the tubes from the air pump.

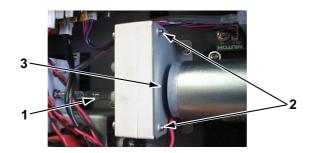


No.	Part name
1	Tube
2	Air pump-retaining screw (M3×8)
3	Air pump

- 3. Remove the four screws retaining the air pump.
- 4. Replace the air pump.
- 5. To install the removed components, reverse the removal procedure.

4.8.3 Replacing Bimor Pump

- 1. Disconnect the bimor pump connector from the TERM_PUMP board assembly.
- 2. Disconnect the tubes from the bimor pump.



No.	Part name
1	Tube
2	Pump bracket 2-retaining screw (M3×5)
3	Pump bracket 2

- 3. Remove the two screws retaining the pump bracket 2.
- 4. Remove the pump bracket.
- 5. Remove the two screws retaining the bimor pump.



No.	Part name
1	Bimor pump
2	Bimor pump-retaining screw (M4×30)

- 6. Replace the bimor pump.
- 7. To install the removed components, reverse the removal procedure.

4.8.4 Replacing Regulator

1. Disconnect the tubes from the regulator.

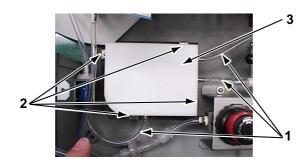


No.	Part name
1	Tube
2	Regulator bracket
3	Regulator bracket-retaining screw (M3×5)
4	Regulator

- 2. Remove the two screws retaining the regulator bracket.
- 3. Replace the regulator.
- 4. To install the removed components, reverse the removal procedure.

4.8.5 Replacing Air Chamber

1. Disconnect the tubes from the air chamber.

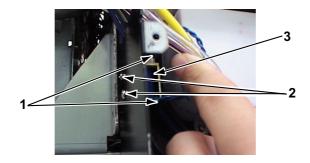


No.	Part name
1	Tube
2	Air chamber-retaining screw (M3×5)
3	Air chamber

- 2. Remove the four screws retaining the air chamber.
- 3. Replace the air chamber.
- 4. To install the removed components, reverse the removal procedure.

4.8.6 Replacing Two-way Valve

- 1. Disconnect the two-way valve connector from the TERM_PUMP board assembly.
- 2. Disconnect the tubes from the two-way valve.

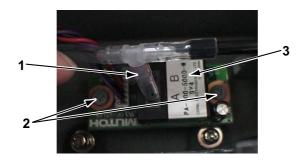


No.	Part name
1	Tube
2	Two-way valve-retaining screw (M3×4)
3	Two-way valve

- 3. Remove the two screws retaining the two-way valve.
- 4. Replace the two-way valve.
- 5. To install the removed components, reverse the removal procedure.

4.8.7 Replacing PRESS_SENSE Board Assembly

1. Disconnect the connector and tubes from the PRESS_SENSE board assembly.

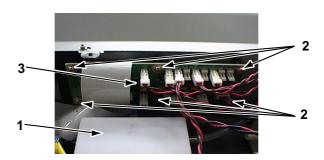


No.	Part name
1	Tube
2	PRESS_SENSE board assembly-retaining screw (M3×6)
3	PRESS_SENSE board assembly

- 2. Remove the two screws retaining the PRESS_SENSE board assembly.
- 3. Replace the PRESS_SENSE board assembly.
- 4. To install the removed components, reverse the removal procedure.

4.8.8 Replacing TERM_PUMP Board Assembly

1. Remove the air chamber following the instructions in "4.8.5 Replacing Air Chamber".



No.	Part name
1	Air chamber
2	TERM_PUMP board assembly-retaining screw (M3×6)
3	TERM_PUMP board assembly

2. Disconnect the connectors from the TERM_PUMP board assembly.



 When connecting and disconnecting the FFC type cables to/from the TERM_PUMP board assembly connectors, always pull or push the cables straightforwardly.

Pulling or pushing them slantwise may damage/short/break the terminals in the connectors, resulting in breakdown of the on-board devices.

Table 4-8 Connectors to TERM_PUMP Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J1	30	White	SUB board	Lock type
2	J2	2	Blue	Ink pump	
3	Ј3	2	White	Ink pump	
4	J4	2	White	Ink pump	
5	J5	2	White	Ink pump	
6	J6	2	White	Ink pump	
7	J7	2	White	Ink pump	
8	Ј8	2	White	Ink pump	
9	J11	2	White	Two-way solenoid valve	
10	J12	3	White	Air pump	Lock type
11	J13	2	White	Bimor pump	
12	J14	5	White	PRESS_SENS	

- 3. Remove the six screws retaining the TERM_PUMP board assembly.
- 4. Replace the TERM_PUMP board assembly.
- 5. To install the removed components, reverse the removal procedure.

4.8.9 Replacing Safety Valve Assembly

1. Disconnect the tube from the safety valve assembly.

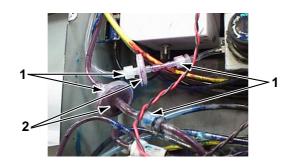


No.	Part name
1	Tube
2	Safety valve

- 2. Replace the safety valve assembly.
- 3. To install the removed components, reverse the removal procedure.

4.8.10Replacing Ink Filter

1. Twist the lure fitting (male) and remove the ink filter.



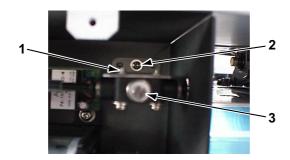
No.	Part name
1	Lure fitting (male)
2	Ink filter

- 2. Replace the ink filter.
- 3. To install the removed components, reverse the removal procedure.

4.8.11 Replacing Throttle Valve

1. Disconnect the tube from the nipple.

2. Remove the one screw retaining the speed controller bracket.



No.	Part name
1	Speed controller bracket
2	Speed controller bracket-retaining screw (M3×5)
3	Throttle valve

- 3. Remove the speed controller bracket.
- 4. Remove the two screws retaining the throttle valve to the speed controller bracket.



No.	Part name
1	Speed controller bracket
2	Screw retaining throttle valve to speed controller bracket (M3×16)
3	Throttle valve

- 5. Replace the throttle valve.
- 6. To install the removed components, reverse the removal procedure.

4.8.12 Replacing Nipple

- 1. Remove the throttle valve following the instructions in "4.8.11 Replacing Throttle Valve".
- 2. Press the portion indicated by the arrow "3" in the following figure to remove the nipple.



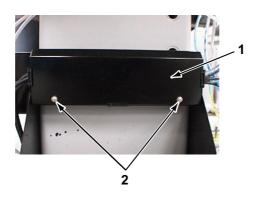
No.	Part name
1	Throttle valve
2	Nipple

- 3. Replace the nipple.
- 4. To install the removed components, reverse the removal procedure.

4.9 Replacement of Leg Section Components

4.9.1 Replacing TERM_TANK Board Assembly

1. Remove the two screws retaining the board cover.



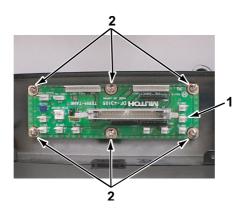
No.	Part name
1	Board cover
2	Board cover-retaining screw (M3×4)

- 2. Remove the board cover.
- 3. Disconnect the following connectors from the TERM_TANK board assembly.

Table 4-9 Connectors to TERM_TANK Board Assembly

No.	Connector No.	# of pins	Colo r	Connect to	Remark
1	J1	40	White	SUB board	Lock type
2	J2	2	White	Level switch	
3	Ј3	2	White	Level switch	
4	J4	2	White	Level switch	
5	J5	2	White	Level switch	
6	Ј6	2	White	Level switch	
7	J7	2	White	Level switch	
8	J10	2	Blue	Level switch	
9	J11	2	White	Level switch	
10	J14	12	White	TERM_ROLL board	
11	J15	12	White		

- 4. Remove the six screws retaining the TERM_TANK board assembly.
- 5. Replace the TERM_TANK board assembly.



No.	Part name
1	TERM_TANK board assembly
2	TERM_TANK board assembly-retaining screw (M3×6)

6. To install the removed components, reverse the removal procedure.

4.9.2 Replacing Main Bottle, Bottle Cap, Ink Cap, and Ink Level Switch

1. Remove the bottle cap from the main bottle.



No.	Part name
1	Main bottle
2	Bottle cap
3	Ink cap

- 2. Remove the ink cap from the bottle cap.
- 3. Remove the ink supply pipe.



No.	Part name
1	Bottle cap
2	Ink supply pipe
3	Nut
4	Ink level switch

- 4. Remove the nut retaining the ink level switch.
- 5. Remove the ink level switch.
- 6. Replace the bottle cap.
- 7. To install the removed components, reverse the removal procedure.

4.9.3 Replacing Waste Fluid Bottle, Bottle Cap, Waste Ink Cap Assembly, and Waste Fluid Level Switch



- Before replacing the waste fluid tank, extract all waste fluid from the existing tank.
- Always ensure that there is no residual waste fluid in the waste fluid tube.
- 1. Disconnect the waste fluid tube from the waste ink cap assembly.
- 2. Remove the bottle cap from the waste fluid bottle.
- 3. Remove the waste ink cap assembly from the bottle cap.



No.	Part name
1	Waste fluid tube
2	Waste ink cap assembly
3	Bottle cap
4	Waste fluid bottle

- 4. Remove the nut retaining the waste fluid level switch.
- 5. Remove the waste fluid level switch.
- 6. Replace the bottle cap.



No.	Part name
1	Bottle cap
2	Nut
3	Waste fluid level switch

7. To install the removed components, reverse the removal procedure.

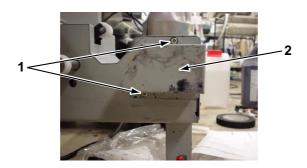
4.10 Replacement of Wind Roller Section Components

This section describes the procedures to replace the TERM_ROLL assembly, sensor assembly, and winding unit components.

4.10.1 Replacing TERM_ROLL Board Assembly

(1) 64-inch model

1. Remove the two screws retaining the roller cover.



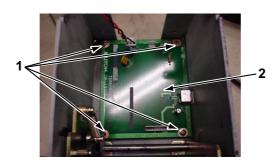
No.	Part name
1	Roller cover-retaining screw (M4×8)
2	Roller cover

- 2. Remove the roller cover.
- 3. Remove the four screws retaining the winding unit cover.



No.	Part name
1	Winding unit cover-retaining screw (M3×8)
2	Winding unit cover

- 4. Remove the winding unit cover.
- 5. Disconnect the connectors from the TERM_ROLL board assembly.
- 6. Remove the four screws retaining the TERM_ROLL board assembly.



No.	Part name
1	TERM_ROLL board assembly-retaining screw (M3×8)
2	TERM_ROLL board assembly

- 7. Replace the TERM_ROLL board assembly.
- 8. To install the removed components, reverse the removal procedure.

(2) 87-inch model

1. Remove the four screws retaining the roller cover1 and roller cover 2.

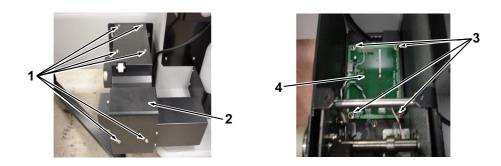




No.	Part name
1	Screw retaining roller cover 1 and roller cover 2, screw retaining winding motor cover (M4×8)
2	Roller cover 1
3	Roller cover 2
4	Winding motor cover

2. Remove the four screws retaining the winding motor cover.

3. Remove the six screws retaining the winding unit cover.



No.	Part name
1	Winding unit cover-retaining screw (M4×8)
2	Winding unit cover
3	TERM_ROLL board assembly-retaining screw (M3×6)
4	TERM_ROLL board assembly

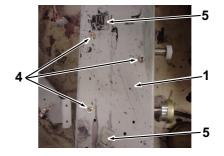
- 4. Disconnect the connectors from the TERM_ROLL board assembly.
- 5. Remove the four screws retaining the TERM_ROLL board assembly.
- 6. Replace the TERM_ROLL board assembly.
- 7. To install the removed components, reverse the removal procedure.

4.10.2Replacing Winding Unit Components

(1) 64-inch model

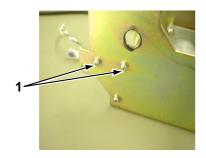
- 1. Remove the TERM_ROLL board assembly following the instructions in "4.10.1 Replacing TERM_ROLL Board Assembly".
- 2. Remove the two screws retaining the winding unit sensor base.
- 3. Remove the four winding chassis-retaining bolts. Remove the cable from the clamp located at the back.

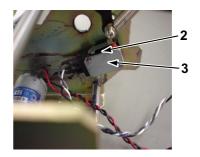




No.	Part name		
1	Winding chassis		
2	Hexagon socket bolt		
3	Roller shaft-retaining screw (M3×8)		
4	Winding unit-retaining screw (M4×8)		
5	Clamp		
6	Roller shaft		
7	Winding unit		

- 4. Disconnect the connectors from the TERM_ROLL board assembly.
- 5. Remove the one screw retaining the roller shaft.
- 6. Remove the three screws retaining the winding unit.
- 7. Remove the winding unit.
- 8. Disconnect the connector from the winding unit switch assembly.
- 9. Remove the two screws retaining the winding unit switch assembly.





No.	Part name	
1	Winding unit switch assembly-retaining screw (M3×16)	
2	Winding unit switch assembly	
3	Switch nut	

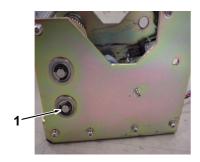
10. Replace the winding unit switch assembly.



When removing the winding unit switch assembly, exercise extreme caution not to drop the switch nut on to the TERM_ROLL board assembly.

- 11. Replace the two snaps located left and right that retain the limiter shaft.
- 12. Replace the mini keeper.

- 13. Remove the two retaining screws for the small gear and remove the small gear.
- 14. Replace the limiter gear.
- 15. Replace the limiter spring.



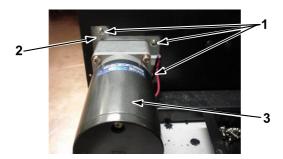


No.	Part name	
1	Snap	
2	Limiter shaft	
3	Gear (small)	
4	Retaining nut	
5	Mini keeper	
6	Limiter gear	
7	Limiter spring	

16. To install the removed components, reverse the removal procedure.

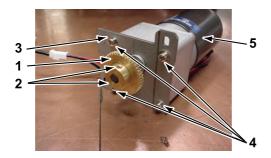
(2) 87-inch model

- 1. Remove the TERM_ROLL board assembly following the instructions in "4.10.1 Replacing TERM_ROLL Board Assembly".
- 2. Disconnect the winding motor connector.
- 3. Remove the three screws retaining the winding motor bracket.



No.	Part name	
1	Winding motor bracket-retaining screw (M4×8)	
2	Winding motor bracket	
3	Winding motor	

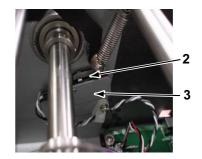
4. Remove the two screws retaining the motor gear and remove the motor gear.



No.	Part name	
1	Motor gear	
2	Retaining screw	
3	Winding motor bracket	
4	Winding motor-retaining screw (M4×8)	
5	Winding motor	

- 5. Remove the four screws retaining the winding motor.
- 6. Replace the winding motor.
- 7. Disconnect the connector from the winding unit switch assembly.
- 8. Remove the two screws retaining the winding unit switch assembly.





No.	Part name	
1	Winding unit switch assembly-retaining screw (M3×16)	
2	Winding unit switch assembly	

No.	Part name
3	Switch nut

9. Replace the winding switch assembly.



When removing the winding unit switch assembly, exercise extreme caution not to drop the switch nut on to the TERM_ROLL board assembly.

10. To install the removed components, reverse the removal procedure.

4.11 Replacement of Feed Out Section Components

To replace the components, refer to "4.10 Replacement of Wind Roller Section Components".

5 SELF-DIAGNOSIS FUNCTION

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5 Self-Diagnosis Function

5.1 Introduction

This chapter provides information on the self-diagnosis function.

The self-diagnosis function adjusts the drawing accuracy. It is used in the manufacturing process, adjustment, and maintenance.

The self-diagnosis function is implemented in the system firmware. All functions are available from the operation panel.



"2.3 Part names and functions"

5.2 Preparation

Before you can use the self-diagnosis function, you must make the machine ready for that and call up the self-diagnosis menu.

5.2.1 Preparations on Machine

Before starting up the self-diagnosis function, perform the following preparations.

(1) Setting printing paper

Set a roll paper for adjustment.



Make sure to use coated paper for the adjustment purpose.

(2) Connecting power cable

Connect the power cable to the machine's inlet assembly and insert the power plug into an outlet.

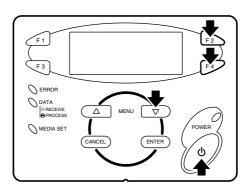


Do not connect three or more power plugs to one outlet.

5.2.2 Starting Up

To use the self-diagnosis function, you must first call up the self-diagnosis menu on the operation panel. The self-diagnosis menu is completely independent of the normal operation mode and self-diagnosis display mode. To call up the self-diagnosis menu, follow the steps below.

- 1. If the system is in the operation mode or the self-diagnosis menu mode, press the Power key.
- 2. Press and hold the F2 key, F4 key, and Menu key simultaneously. While holding down these keys, press the Power key.
 - The system will enter the self-diagnosis mode and display the self-diagnosis menu.



5.3 Operations in Self-Diagnosis Mode

This section explains how to operate in the self-diagnosis mode as well as provides the list of available diagnosis items.

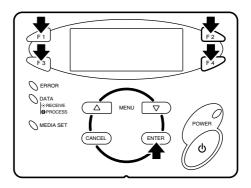
5.3.1 Operating Self-Diagnosis Mode

Follow the operation flow shown below to operate the self-diagnosis mode.

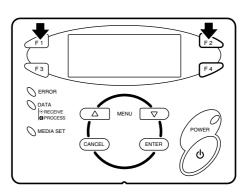


For more detailed operation steps, refer to the flow chart of the applicable diagnosis item.

- Press the Menu ▼ key or the Menu ▲ key in the operation panel to change over the diagnosis menu.
 - The diagnosis menu changes over.
- 2. Press the F1, F2, F3, or F4 key to select the applicable diagnosis item. Press the Confirm key.
 - The selected item is accepted.
 - If the item has a sub menu, the sub menu is displayed.



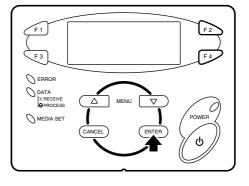
3. Press the F2 or F4 key in the operation panel to modify the set value.



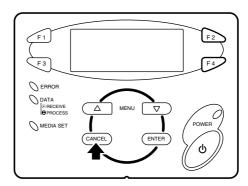
- 4. To save the modified value, press the Confirm key in the operation panel.
 - The modified set value is stored and a next item is displayed.



If you press the Cancel key instead of the Confirm key, the modification is not stored.



- 5. To quit the diagnosis, press the Cancel key in the operation panel.
 - The system returns to an upper hierarchy of the diagnosis menu.



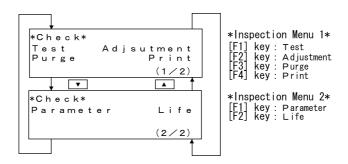
6. To exit the self-diagnosis menu, press the Power key.

5.3.2 Diagnosis Items in Self-Diagnosis Menu

The Self-Diagnosis menu includes the following diagnosis items.

Table 5-1 Diagnosis Items in Self-Diagnosis Menu

Diagnosis item	Contents	Reference	
Inspection Menu	Performs various inspections on the circuit boards, sensors, and fans.	图 5.4 Inspection Menu	
Adjustment Menu	Performs various adjustments for the printer mechanism.	工管 5.5 Adjustment Menu	
Purge Menu	Performs mode-specified purge.	₹ 5.6 Purge Menu	
Sample Printing Menu	Performs sample printing necessary for adjustment.	13 5.7 Sample Drawing Menu	
Parameter Menu	Configures various adjustment parameters.	工管 5.8 Parameter Menu	
Endurance Running Menu	Performs endurance running of the printer mechanism.	13 5.9 Endurance Running Menu	

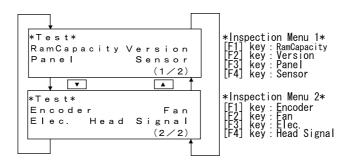


5.4 Inspection Menu

In the Inspection menu, you can perform various inspections on the circuit boards, sensors, and fans. The Inspection menu includes the following diagnosis items.

Table 5-2 Diagnosis Items in Inspection Menu

Diagnosis item	Contents	Reference
Memory size	Displays the size of memories mounted on the main board assembly.	13 5.4.1 Memory Size Menu
Version	Displays the versions of the firmware and main board assembly.	5.4.2 Version Menu
	•Firmware version	
	Backup parameter version	
	•Setting of dip switches	
	•Revision of main board assembly	
Operation panel	Used to check the functions of the operation panel keys, LCD, and LED.	12 5.4.3 Operation Panel Menu
Sensor	Displays the status of the following sensors.	5.4.4 Sensor Menu
	•CR_HP sensor	
	•Cover sensor	
	•Cover maintenance sensor	
	•Lever sensor	
	•P_EDGE sensor	
	•P_REAR sensor	
	•HD_SLIDE sensor	
	•Thermister sensor	
	●Ink END sensor	
	•Vacuum sensor	
Encoder	Displays the detected values from the following encoders.	5.4.5 Encoder Menu
	•CR (Carriage)	
	•PF (Paper feed)	
Fan	Used to check if the fan operates normally by turning it ON and OFF.	13 5.4.6 Fan Menu
History	Used to check the following records.	工管 5.4.7 History Menu
	Maintenance history	
	•Serious error history	
Head waveform	Used to check the head-driving waveform.	图 5.4.8 Head Waveform Menu



5.4.1 Memory Size Menu

This menu displays the memory size.

```
*RamCapacity*
RamCapacity 64MB
```



The Memory Size menu displays the size of the expansion memory (64MB or 128MB).

5.4.2 Version Menu

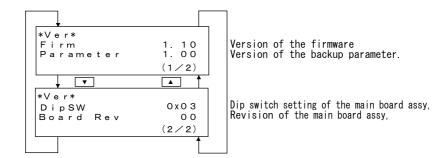
This menu displays the following contents about the firmware and main board assembly.

- Firmware version
- Backup parameter version
- Setting of dip switches of main board assembly
- Revision of main board assembly



The details of the dipswitch setting of main board assembly are as follows.

- ON: 0, OFF: 1
- Switch No. 1: LSB
- Switch No. 2: MSB



5.4.3 Operation Panel Menu

This menu is used to check the functions of the operation panel keys, LCD, and LEDs.

(1) Operation panel key check

When you press a key in the operation panel, the name of the key is displayed on the LCD. To exit the operation panel key check, press the Cancel key.

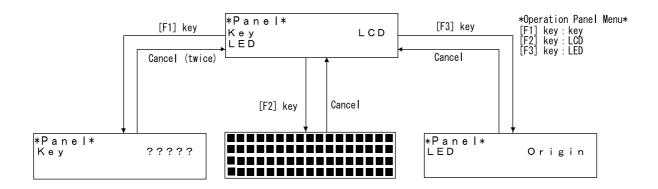
(2) LCD check

The entire LCD screen is filled in black. You can check for any missing dots.

(3) LED check

The following LEDs light up in order. The LCD displays the name of the LED that is currently illuminated.

- Power lamp
- Error lamp
- Data lamp
- Lever lamp



5.4.4 Sensor Menu

This menu displays the sensor status in the operation panel.

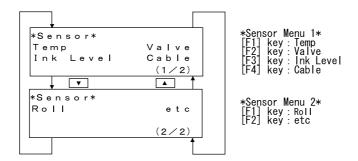
If the displayed sensor status does not match the actual machine status, replace or adjust the relevant sensor referring to "Table 5-3 Inspection Items in Sensor Menu".

Table 5-3 Inspection Items in Sensor Menu

No.	Sensor name	Status in display	Reference
1	Head thermister	**°C	飞音4.6.1 Replacing HEAD Board Assembly
2	Sub tank	**°C	
3	Platen	**°C	
4	Thermister (dry)	**°C	
5	Valve sensor	Sensor error / Jet wash / Ink side / Sensor error	
6	Ink level sensor	Enough / Poor	
7	Cable sensor	OK / NG	
8	Paper feed/wind sensor	ON / OFF	
9	CR_HP sensor	ON / OFF	13 4.5.2 Replacing CR Motor Assembly
10	HD_SLIDE sensor	ON / OFF	译 4.5.3 Replacing SLID Motor Assembly
11	Cover sensor	Open / Close	飞音7.8 Cover Sensor Adjustment
12	Cover maintenance sensor	Open / Close	
13	Lever sensor	Up / Down	L實 4.5.4 Replacing HD_SLIDE Sensor Assembly
14	Foot lever sensor	ON / OFF	
15	Waste fluid sensor	OK / Full	
16	Vacuum sensor	0 to FF	
17	P_EDGE sensor	0 to FF	飞音7.9.1 Jigs and Tools
18	P_REAR sensor	ON / OFF	【記7.9.2 Adjustment Procedure
19	Ink END sensor	KCMY (64-inch spec) KCMmY (87-inch spec)	图 4.8.1 Replacing Ink Pump

NOTE

- The sensitivity of the following sensors is displayed by a hexadecimal number.
 - P_EDGE sensor
 - Vacuum sensor
- For the ink end sensor, the color of the ink that has run out is displayed.
- For an 87-inch model, the items for head temperature, sub tank temperature, valves, and ink level (High/Low) also include the data of the No.5 and No.6 heads. The items for platen temperature and dry temperature also include the data of the No.4 head.





For the 87-inch spec, "Feed&wind" is displayed instead of "Wind".

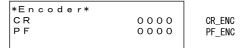
5.4.5 Encoder Menu

This menu displays the detected values from the following encoders.

- CR_ENC (Carriage)
- PF_ENC (Paper feed)



For the encoder-detected values, the encoder pulse numbers are displayed in hexadecimal number.



5.4.6 Fan Menu

This menu is used to check if the fan operates normally by turning ON and OFF the fan.

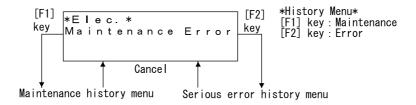
As soon as you select this menu, the fan is activated.

When you press the Cancel key, the fan is deactivated and the operation panel displays "Inspection: Fan".

```
*Fan*
「Cancel」End
```

5.4.7 History Menu

This menu is used to check the maintenance history and serious error history.



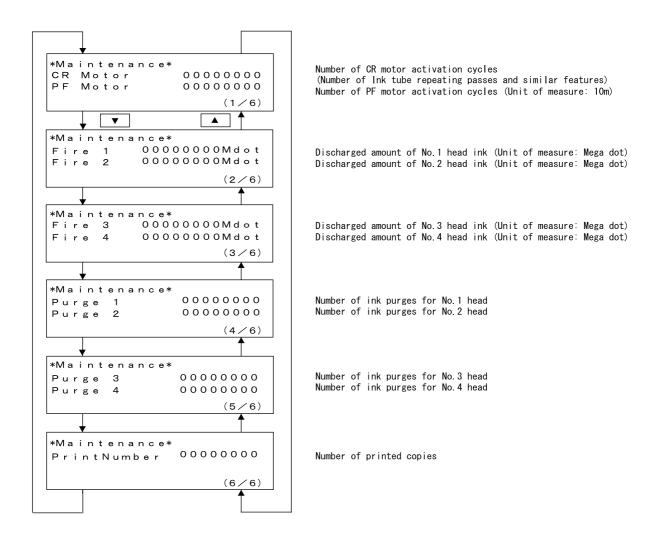
(1) Maintenance history

This displays the past maintenance records on the following components.

- Number of CR motor activation cycles
- Number of PF motor activation cycles
- Number of printed copies
- Discharged amount of No.1 head ink
- Discharged amount of No.2 head ink
- Discharged amount of No.3 head ink
- Discharged amount of No.4 head ink
- Discharged amount of No.5 head ink
- Discharged amount of No.6 head ink
- Number of ink purges for No.1 to No.6 heads

NOTE

- All numeral values in the maintenance history are respectively displayed by a hexadecimal number.
- The ink discharged amount and number of ink purges for the No.5 and No.6 heads are only available with an 87-inch model.



NOTE

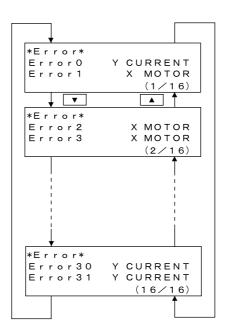
Only in an 87-inch spec, "Discharge 5, 6" and "Purge 5, 6" are displayed.

(2) Serious error history

This menu displays the serious errors that have occurred so far.

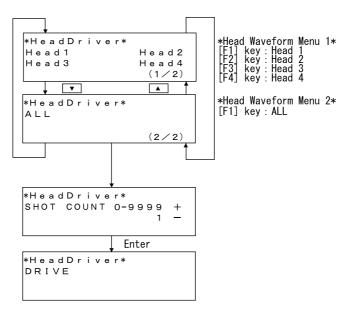
NOTE

- A serious error history does not include any CPU errors.
- A serious error history can contain up to 32 error events.



5.4.8 Head Waveform Menu

This menu is used to check the head-driving waveform.



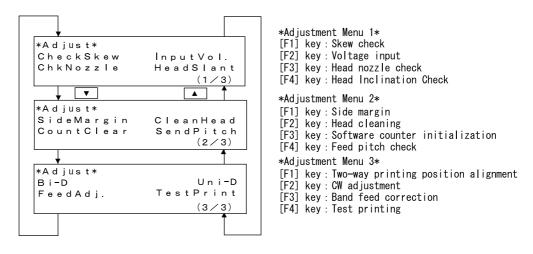
*The 87-inch spec has head 5 and 6.

5.5 Adjustment Menu

In this menu, you can align the printing position and correct the paper feed operation. The Adjustment menu includes the following diagnosis menus.

Table 5-4 Diagnosis Items in Adjustment Menu

Diagnosis item	Contents	Reference
Skew check	Performs paper feed and detects the degree of skew in paper feed by the sensor.	に置 5.5.1 Skew Check Menu
Voltage input	To this item, enter the characteristic value of the printer heads in use. After the entry, refill ink.	工艺 5.5.2 Voltage Input Menu
Head nozzle check	Prints out a drawing to check the ink discharge performance of the head nozzles.	T 5.5.3 Head Nozzle Check Menu
Head Inclination Check	Prints out a drawing to check for printer head inclination. Mechanical adjustment must be performed as necessary.	上記 5.5.4 Head Inclination Check Menu
Two-way printing position alignment	Prints out a drawing to align the two-way printing position.	TS 5.5.5 Two-Way Printing Position Alignment Menu
CW adjustment	Prints out a drawing to adjust any gaps between the heads.	工管 5.5.6 CW Adjustment Menu
Band feed correction	Prints out a drawing to correct the paper feed amount for each pass.	工管 5.5.7 Band Feed Correction Menu
Test printing	Prints out a nozzle check pattern and the adjustment variables.	工管 5.5.8 Test Drawing Menu
Side margin	Prints out a drawing to adjust the side margin.	で 5.5.9 Side Margin Menu
Head cleaning	Cleans the tubes and heads using cleaning fluid.	飞 5.5.10 Head Cleaning Menu
Software counter initialization	Clears various software counters.	に対する。 Initialization Menu
Feed pitch check	Used to check the paper feed amount for one band.	工管 5.5.12 Feed Pitch Check Menu



5.5.1 Skew Check Menu

In this menu, you can perform paper feed and check the degree of skew in the paper feed operation by means of the sensors.

When you select this item from the Adjustment menu, the machine feeds the paper by one pass and checks for paper feed skew by comparing the paper edge positions before and after the paper feed detected by the sensors.



Before performing skew check, ensure that the paper is set correctly.

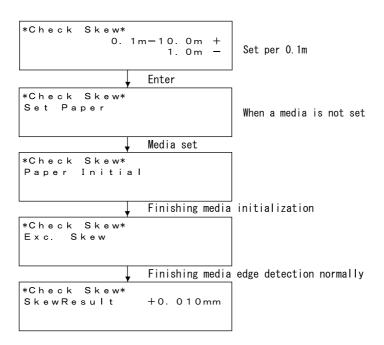


Table 5-5 Skew Amount Specification

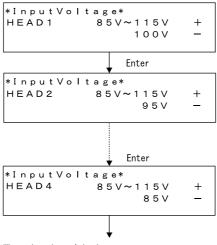
Condition	Specification
Right side	0mm
Left side	5mm or less

5.5.2 Voltage Input Menu

This menu is used to input the head voltage.

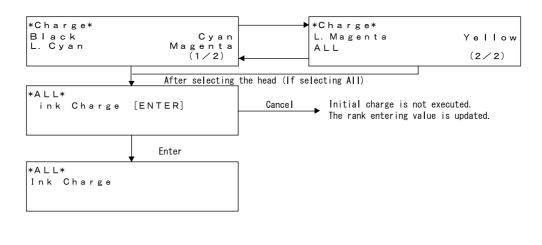
The head voltage value is used to determine the head-driving voltage and correct the head temperature. To input the head voltage, follow the steps below.

1. Using the keys in the operation panel, enter an appropriate parameter value for the head voltage.



When changing: Ink charge menu

2. The system identifies the voltage rank of the head applicable to the entry and then performs initial filling.



NOTE

The ink colors light cyan and light magenta are only available with a 87-inch spec.

5.5.3 Head Nozzle Check Menu

In this menu, you can check if the head nozzles, after refilled, can discharge ink correctly by printing a sample drawing.

To print out head nozzle check patterns, follow the steps below.

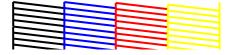
- 1. Set paper as necessary.
- 2. After paper is set, the machine prints out head nozzle check patterns in the following modes.
 - 1 pass, single way
 - PF: 180dpi



Pressing the Cancel key in the operation panel during the printout causes the machine to stop the printout.

- 3. Check the printed head nozzle check patterns for the following points.
 - Ink nozzle discharge amount (omission, discontinuity, meandering)
 - Satellite
 - T fence
 - Nozzle alignment in vertical direction
 - Nozzle alignment in horizontal direction

Nozzle check: Prints out patterns in the order of K, C, M, and Y.



Nozzle alignment in vertical direction: Prints out patterns in the order of K, C, M, and Y.





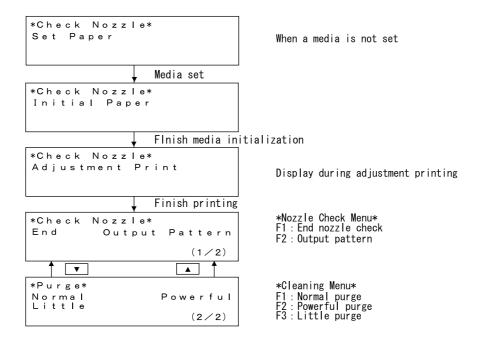
An 87-inch spec prints out patterns in the order of K, C, Lc, M, Lm, and Y.

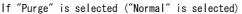
4. If any abnormal conditions are found in the ink discharge status of the head nozzles, perform ink purge on the relevant heads.

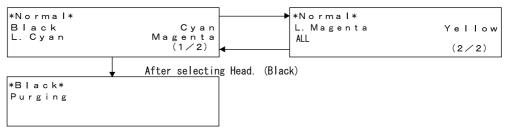


15.6Purge Menu"

5. After the ink purge, the system returns to the purge selection menu.







※ 87-inch spec has light cyan and light magenta.

5.5.4 Head Inclination Check Menu

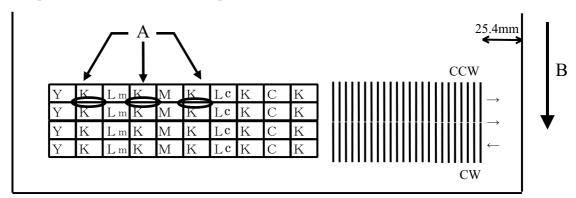
This menu prints out a sample drawing to check for head inclination. To perform head inclination check, follow the steps below.

- 1. Set paper as necessary.
- 2. After paper is set, the machine prints out head inclination check patterns in the following modes.
 - 1 pass, single way
 - PF: 180dpi, CR: 360dpi



Pressing the Cancel key in the operation panel during the printout causes the machine to stop the printout.

3. Check the printed head inclination check patterns.

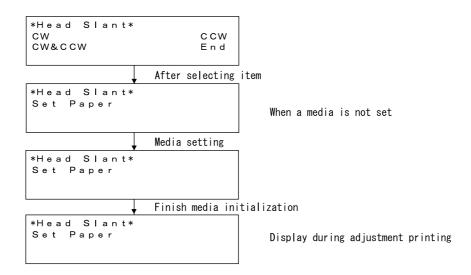


- A: Check by these connection points.
- B: Paper feed direction
- 4. If any head inclination is found, perform mechanical adjustment.



"7.7 Head Accuracy Adjustment"

5. After mechanical adjustment, make the machine print out head nozzle check patterns again.



5.5.5 Two-Way Printing Position Alignment Menu

This menu is used to align the head positions for two-way printing.

To align the head position for two-way printing, you must first print out a Bi-D drawing and identify the difference between the CW printing position and the CCW printing position. Then, you enter the difference for the relevant parameter.

The actual procedure is as follows.

- 1. Set paper as necessary
- 2. After paper is set, the machine prints out two-way printing position alignment patterns.
- 3. Check the printed two-way printing position alignment patterns for the following points.

Table 5-6 Adjustment Items and Drawing Mode

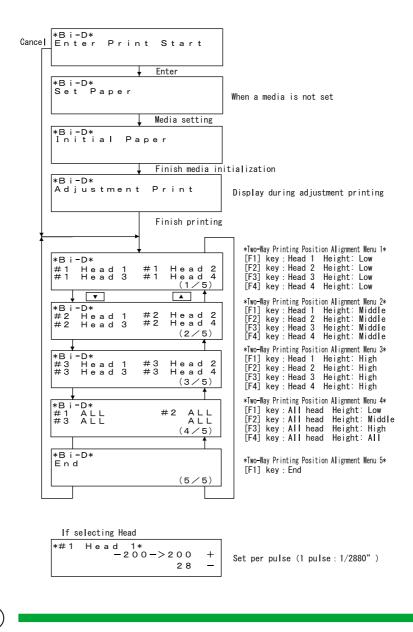
Item	Contents
No.1 head 1	Bi-D adjustment for No.1 head, head gap: LOW
No.1 head 2	Bi-D adjustment for No.2 head, head gap: LOW
No.1 head 3	Bi-D adjustment for No.3 head, head gap: LOW
No.1 head 4	Bi-D adjustment for No.4 head, head gap: LOW
No.2 head 1	Bi-D adjustment for No.1 head, head gap: MIDDLE
No.2 head 2	Bi-D adjustment for No.2 head, head gap: MIDDLE
No.2 head 3	Bi-D adjustment for No.3 head, head gap: MIDDLE
No.2 head 4	Bi-D adjustment for No.4 head, head gap: MIDDLE
No.3 head 1	Bi-D adjustment for No.1 head, head gap: HIGH
No.3 head 2	Bi-D adjustment for No.2 head, head gap: HIGH
No.3 head 3	Bi-D adjustment for No.3 head, head gap: HIGH
No.3 head 4	Bi-D adjustment for No.4 head, head gap: HIGH
No.1 ALL	Prints by all heads with the LOW head gap
No.2 ALL	Prints by all heads with the MIDDLE head gap
No.3 ALL	Prints by all heads with the HIGH head gap
ALL	Prints by all heads with all head gaps
Exit	Exit the menu

										1
										#3-D
										#3-C
										#3-B
										#3-A
										#2-D
										#2-C
										#2-B
										#2-A
				1						#1-D
										#1-C
										#1-B
										#1-A



Media Feed Direction

- 4. If any abnormal conditions are found, identify the difference between the CW printing position and the CCW printing position and enter the difference as the two-way printing position aligning parameter.
- 5. If you have changed any parameters, make sure to update the parameters.



For an 87-inch spec, parameters for the No.5 and No.6 heads are also available.

5.5.6 CW Adjustment Menu

In this menu, you can adjust the gap between two heads.

To adjust the gap between two heads, you must first print out a Uni-D drawing and identify the difference between the selected two heads. Then, you enter the difference for the relevant parameter. The actual procedure is as follows.

1. Set paper as necessary.

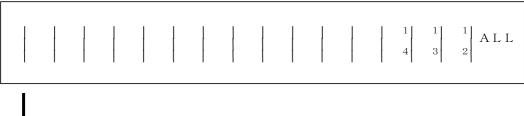
NOTE

- 2. After paper is set, the machine prints out CW adjustment check patterns.
- 3. Check the printed CW adjustment check patterns for the following points.

Table 5-7 CW Adjustment Check Item

Item	Contents
Head 1-2	Uni-D adjustment of No.2 head to No.1 head
Head 1-3	Uni-D adjustment of No.3 head to No.1 head
Head 1-4	Uni-D adjustment of No.4 head to No.1 head
ALL	Print outs Uni-D adjustment patterns for No.2/3/4 heads to No.1 head
Exit	Exit the menu

Print pattern (If ALL)

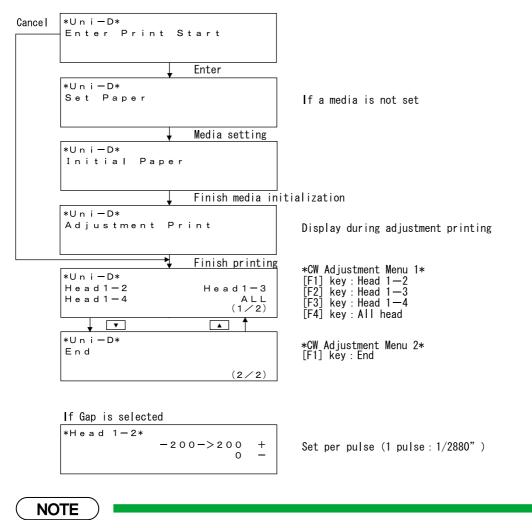




A: Paper feed direction

4. If any abnormal conditions are found, identify the gap between the two heads and enter it as the CW adjustment parameter.

After entering parameters, make sure to update the parameters.



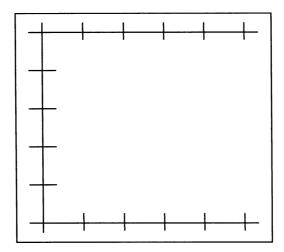
For an 87-inch spec, the items "Head 1-5" and "Head 1-6" are also available.

5.5.7 Band Feed Correction Menu

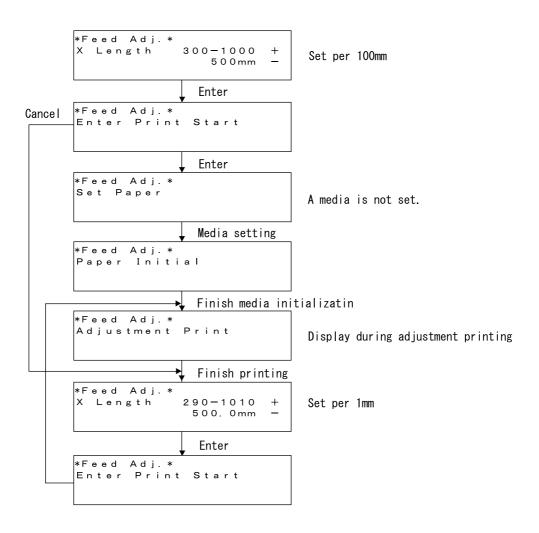
In this menu, you can correct the paper feed distance.

To correct the paper feed distance, you must first print out check patterns and measure the distance between lines drawn in the paper feed direction. Then you enter the measured value through this menu. The system uses this entered value to determine the PF encoder resolution parameter in the firmware. The actual procedure is as follows.

- 1. Set paper as necessary.
- 2. After paper is set, the machine prints out band feed correction patterns in the following modes.
 - Length: 300 1000mm
 - 2 pass Single way
 - PF: 180dpi, CR: 180dpi
- 3. Check the printed band feed correction patterns for the following point.
 - Paper feed amount



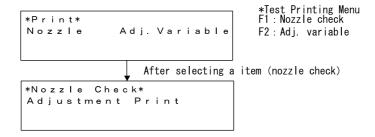
4. Enter the measured value as the paper feed distance parameter.



5.5.8 Test Drawing Menu

In this menu, you can print out adjustment patterns for checking various adjustment items. The actual procedure is as follows.

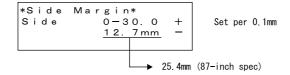
- 1. Set paper as necessary
- 2. After paper is set, the machine prints out the following test drawings.
 - Nozzle check: Head nozzle check pattern
 - Adjustment variables: Set values of various adjustment variables
- 3. Press the Confirm key in the operation panel to start the selected test drawing.



5.5.9 Side Margin Menu

In this menu, you can print out adjustment patterns for checking various adjustment items. The actual procedure is as follows.

- 1. Set paper as necessary.
- 2. After paper is set, select the side margin menu.
- 3. Check the printed side margin check patterns.

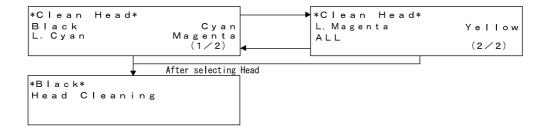


5.5.10 Head Cleaning Menu

This menu is used to purge ink and clean the heads at the end of the manufacturing process, before printer head replacement, and before long-time storage of the machine.

The actual procedure is as follows.

- 1. Remove ink from the ink tank of the head to be cleaned, and put in 300ml to 500ml of JW.
- 2. From the operation panel, select and confirm the head cleaning menu.
- 3. Select the head to be cleaned.



5.5.11 Software Counter Initialization Menu

This menu initializes the software counters such as the ink amount counter.



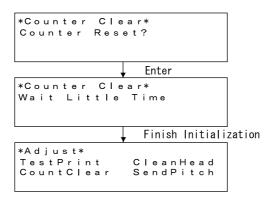
Before delivery, always initialize the software counters.

The software counters that can be initialized through this menu are as follows.

Table 5-8 Software Counters Initialized

Counter	Initial value
Ink amount counter	0
Cumulative printout timer	0
Initial ink charge flag	1

Pressing the Confirm key in the operation panel performs the software counter initialization. Pressing the Cancel key cancels the initialization.



5.5.12Feed Pitch Check Menu

In this menu, you can check the paper feed amount for one band by reviewing a sample drawing. To check the feed pitch, follow the steps below.

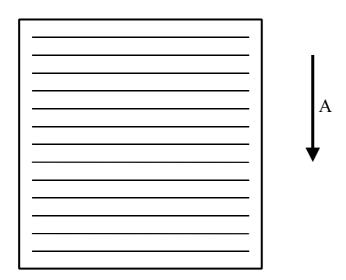
Set paper as necessary.

After paper is set, the machine prints out feed pitch check patterns in the following modes. 1 pass single way

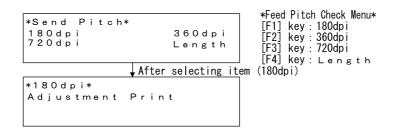


Pressing the Cancel key in the operation panel during the printout causes the machine to stop the printout.

Check the printed feed pitch check patterns.



A: Paper feed direction

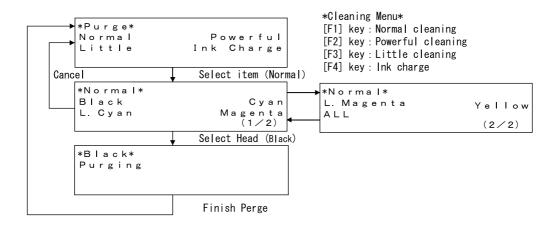


5.6 Purge Menu

In this menu, you can purge ink from the printer heads. The Purge menu includes the following diagnosis items.

Table 5-9 Diagnosis Items in Purge Menu

Diagnosis item	Contents
Normal	Performs normal purge.
Powerful	Performs powerful purge.
Minimum purge	Performs minimum purge.
Initial ink charge	Performs initial ink charge.



NOTE

The ink colors of light cyan and light magenta are only available for an 87-inch spec.

5.7 Sample Drawing Menu

This menu prints out a sample printing.

The Sample printing menu includes the following items.

Table 5-10 Diagnosis Items in Sample Drawing Menu

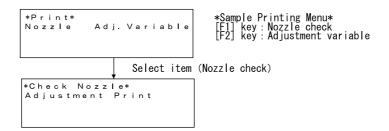
Diagnosis item	Contents
Nozzle check	Print the head nozzle check pattern, head lean check pattern, repeating pass print positioning pattern, and the CW adjustment pattern.
Adjustment variables	Prints out the set values of various adjustment items.

Adjust Parameters

No.		Date	/ /	
N a m e			<u>Ver 1.01F</u>	Dipsw 03h
Ceisius 1 35	2	3 5	3 3 5 4 3 5	
Head Voltage	1	=	8 8 V	
Head Voltage	2	=	9 2 V	
Head Voltage	3	=	89V	
Head Voltage	4	=	8 9 V	
Bi-01 Head 1		=	- 105	
Bi-01 Head 2		=	- 112	
Bi-01 Head 3		=	- 96	
Bi-01 Head 4		=	- 102	
Bi-02 Head 1		=	- 107	
Bi-02 Head 2		=	- 101	
Bi-02 Head 3		=	- 93	
Bi-02 Head 4		=	- 100	
Bi-03 Head 1		=	- 100	
Bi-03 Head 2		=	- 103	
Bi-03 Head 3		=	- 93	
Bi-03 Head 4		=	- 117	
CW 1		=	8	
CW2		=	- 1 1	
CM3		=	- 2 6	
Band Step		=	499. OOmm	
Side Margin		=	5. O O mm	
* Head Temp		=	3 5	
* SubTank Heat	e r	=	3 0	

NOTE

If you have not registered the serial number of the machine, you must enter it before you can start the adjustment variable printout.

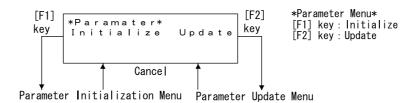


5.8 Parameter Menu

In this menu, you can modify the set values of various adjustment items (adjustment parameter). The Parameter menu includes the following items.

Table 5-11 Diagnosis Items in Parameter Menu

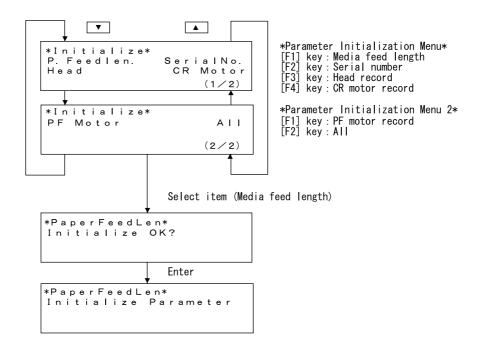
Diagnosis item	Contents	Reference
Initialization	Initializes the adjustment parameters.	15 5.8.1 Parameter Initialization Menu
Update	Updates the adjustment parameters.	13 5.8.2 Parameter Update Menu



5.8.1 Parameter Initialization Menu

This menu initializes the adjustment parameters. The parameters that can be initialized through this menu are as follows.

- Paper feed distance
- Serial number
- Maintenance history (head, CR motor, PF motor)
- Initialization of all items



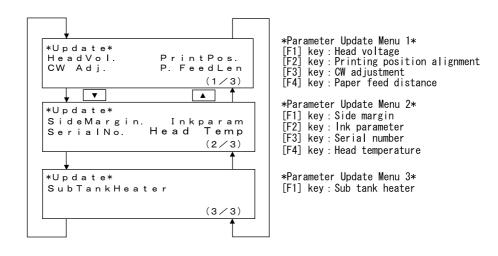
5.8.2 Parameter Update Menu

This menu updates the adjustment parameters. The parameters that can be updated through this menu are as follows.

- Head voltage
- Printing position alignment
- CW adjustment
- Paper feed distance
- Side margin
- Ink parameter
- Serial number
- Head temperature
- Sub tank heater



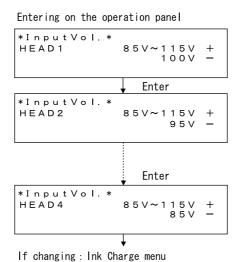
If you update any parameter in the Parameter Update menu, always turn the power OFF after quitting the menu. The updated parameters will not be stored in the flash memory unless the system power is turned OFF.

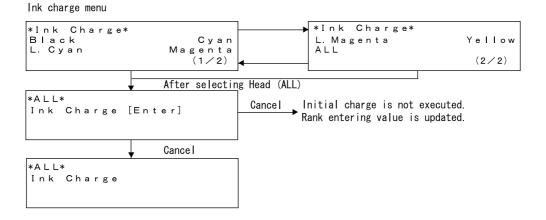


(1) Head voltage

In this menu, you can enter a head voltage. The head voltage is used to determine the printer head-driving voltage and perform temperature correction.

After a head voltage is entered, the system shifts to the Ink Charge menu.



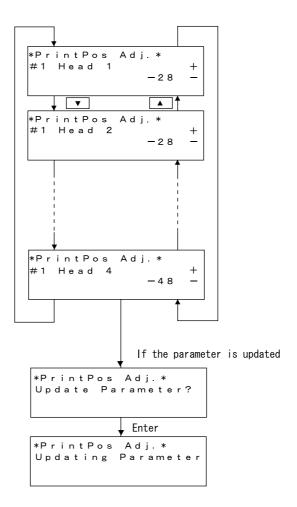




The ink colors of light cyan and light magenta are only available for an 87-inch model.

(2) Printing position alignment

This updates the printing position alignment parameters.

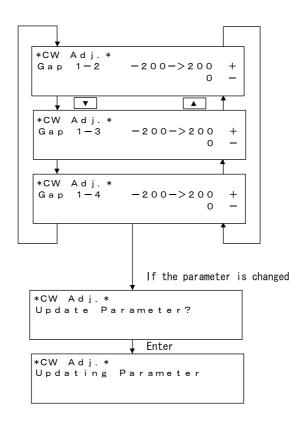


NOTE

For an 87-inch spec, the parameters for "Head 5" and "Head 6" are also available.

(3) CW

This updates the CW adjustment parameters.

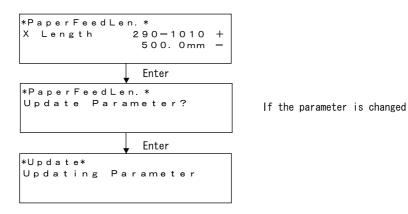


NOTE

For an 87-inch model, the parameters of "Gap1-5" and "Gap1-6" are also available.

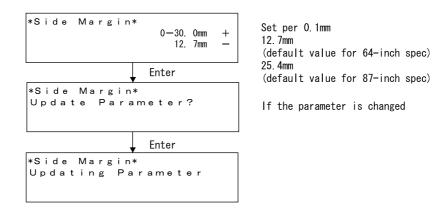
(4) Paper feed distance

This updates the paper feed distance parameters.



(5) Side margin

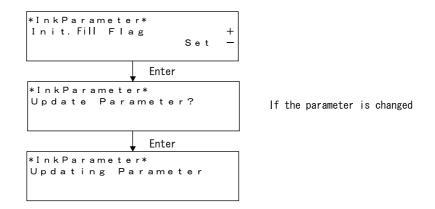
This updates the side margin parameters.



(6) Ink parameter

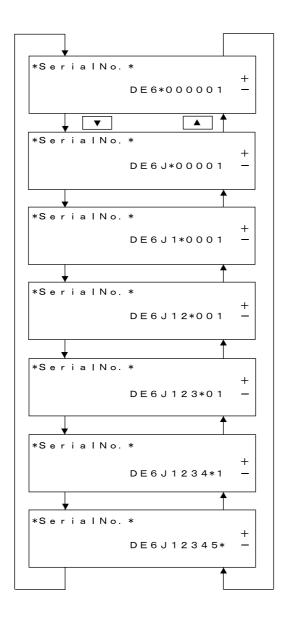
This updates the ink parameter. The available options are as follows.

Set: Ink not filledReset: Ink filled



(7) Serial number entry

This is for entering the serial number.

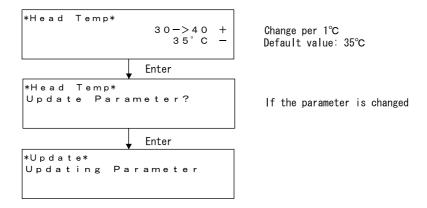


TIP

- The third figure of a serial number differs with the machine size.
 - 6: 64 inch
 - 8: 87 inch
- The fourth figure of a serial number differs with the destination market.
 - J: Japan
 - C: China
 - A: America
 - E: Europe
 - K: International Sales Division
 - F: America (for Iris)

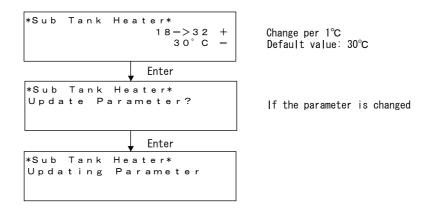
(8) Update/ Head temperature

This updates the head temperature parameter.



(9) Update/Sub tank heater

This updates the sub tank heater temperature parameter.

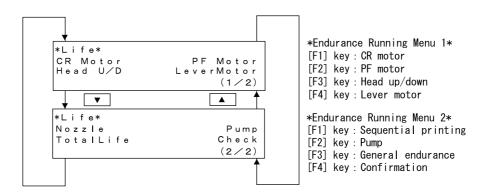


5.9 Endurance Running Menu

In this menu, you can perform endurance running on the printer heads. The Endurance Running menu includes the following items.

Table 5-12 Diagnosis Items in Endurance Running Menu

Diagnosis item	Contents	Reference
CR motor	Performs carriage stroke.	LF 5.9.1 CR Motor Endurance Menu
PF motor	Drives the PF motor.	13 5.9.2 PF Motor Endurance Menu
Head up/down	Changes over the head height repeatedly.	13 5.9.3 Head Up/Down Endurance Menu
Lever motor	Drives the lever motor.	TS 5.9.4 Lever Motor Endurance Menu
Sequential drawing	Prints out a drawing by printer heads repeatedly.	T\$\overline{5.9.5 Sequential} Drawing Endurance Menu
General endurance	Performs endurance running on the CR, PF, head up/down, cutter solenoid, and lever motor concurrently.	T 5.9.7 General Endurance Menu
Confirmation	Used to check the number of endurance running cycles.	T\$\overline{25.9.8 Endurance} Running Check Menu
Pump	Drives the positive/negative pressure pump motor.	了5.9.6 Pump Menu



5.9.1 CR Motor Endurance Menu

This menu performs endurance running for the CR motor.

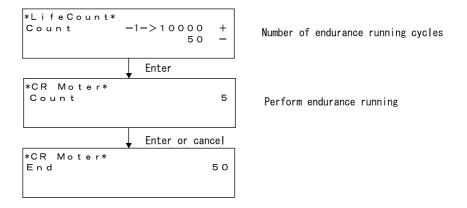
You can perform carriage stroke according to your desired setting. The available setting is shown below.

Table 5-13 Set Item in CR Motor Endurance Menu

Set item	Contents	Set value	Remark
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	



- The operation speed is 291.66cps.
- If the number of endurance running cycles is set to -1, the carriage continuously repeats stroking until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.
- The maximum and minimum values of the carriage stroking distance are as follows.
 - MAX: 2,066 mm (64-inch spec), 2,637.478 mm (87-inch spec) from origin
 - MIN: 8mm from origin



5.9.2 PF Motor Endurance Menu

This menu performs endurance running for the PF motor.

You can drive the PF motor according to your desired settings. The available settings are shown below.

Table 5-14 Set Items in PF Motor Endurance Menu

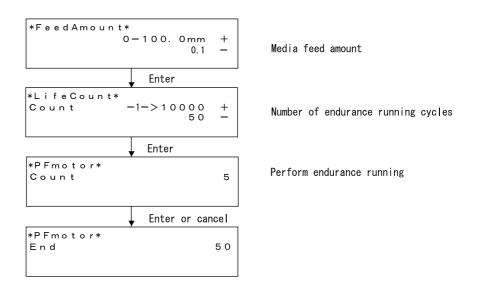
Set item	Contents	Set value	Remark
-	Set the paper feed amount per endurance running cycle	0.1 to 100	Unit: mm
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	



• The motor drive parameters are determined as follows depending on the paper feed amount.

Velocity	54 cps
Acceleration	0.05 G
Deceleration	0.05 G

- If the number of endurance running cycles is set to -1, the PF motor continuously repeats endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.



5.9.3 Head Up/Down Endurance Menu

This menu performs endurance running for the head up/down operation.

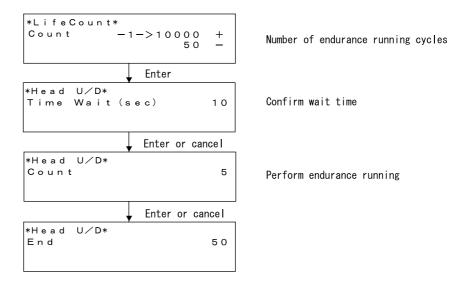
You can perform the capping operation according to your desired settings. The available settings are shown below.

Table 5-15 Set Items in Head Up/Down Endurance Menu

Set item	Contents	Set value	Remark
Waiting tim	Set the waiting time after one cycle of endurance running	10	Unit: second
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	



- If the number of endurance running cycles is set to -1, the heads continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.
- The waiting time is not modifiable.



5.9.4 Lever Motor Endurance Menu

This menu performs endurance running for the lever motor.

You can drive the lever motor according to your desired settings.

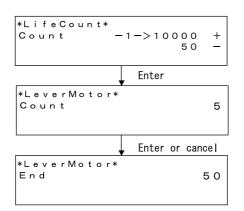
The available settings are shown below.

Table 5-16 Set Item in Lever Motor Endurance Menu

Set item	Contents	Set value	Remark
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	



- If the number of endurance running cycles is set to -1, the lever motor continuously repeats endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of cycles exceeds the maximum value, the counter is reset to 0.



Number of endurance running cycles

Perform endurance running

5.9.5 Sequential Drawing Endurance Menu

This menu performs endurance running for the printer heads.

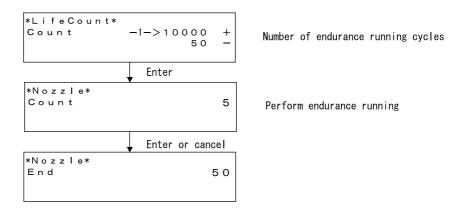
You can operate the printer heads according to your desired settings. The available settings are shown below.

Table 5-17 Set Item in Sequential Drawing Endurance Menu

Set item	Contents	Set value	Remark
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	



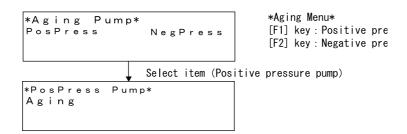
- If the number of endurance running cycles is set to -1, the heads continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of
 cycles exceeds the maximum value, the counter is reset to 0.



5.9.6 Pump Menu

The specified pump will be activated.

While the pump is activated, pressure adjustment of the specified pump is performed.





When performing the pump menu, always perform the ink discharge. If the ink is not discharged there will be a possibility of the ink spraying out or reversing. Ink discharge operation: 18 "5.5.10 Head Cleaning Menu"

5.9.7 General Endurance Menu

This menu performs the general endurance running.

You can operate various driving systems according to your desired settings.

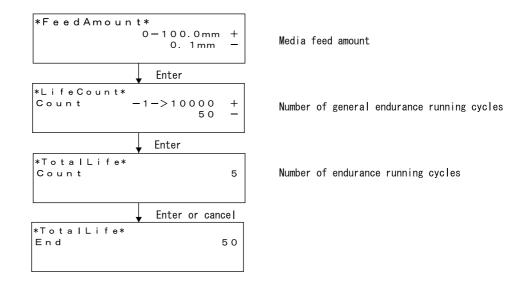
The available settings are shown below.

Table 5-18 Settings of the comprehensive endurance menu

Set item	Contents	Set value	Remark
Paper feed amount	Set the paper feed amount per cycle	0 to 100	Unit: mm
Number of endurance running cycles	Set the number of endurance running cycles	-1 to 10000	

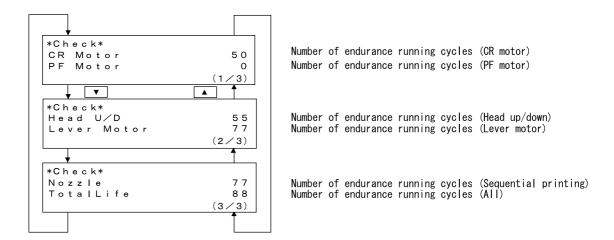
TIP

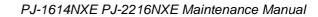
- In the General Endurance menu, the following operations are performed as one cycle of endurance running.
 - Carriage stroking: 185 strokes
 - Paper feed: 185 cycles
 - Head U/D operation: 8 cycles
- If the number of endurance running cycles is set to -1, the units continuously repeat endurance running until a key input is given from the operation panel.
- The maximum counter value for endurance running cycles is 99999999 (up to 8-digit number). If the number of
 cycles exceeds the maximum value, the counter is reset to 0.



5.9.8 Endurance Running Check Menu

In this menu, you can confirm the number of endurance running cycles that have been already finished. The number of endurance running cycles is stored in NVRAM in the system. Therefore, even if a serious error occurs during endurance running, you can confirm the number of finished cycles just before the occurrence of the serious error.





6 MAINTENANCE MANUAL

6.1	Introduction	6-1
6.2	Overview	6-1
6.3	Operations in Maintenance Mode	6-2
6.3	Starting Up Maintenance Mode	6-2
6.3	Operating Maintenance Mode	6-2
6.4	Maintenance Menu	6-3
6.4	.1 Counter Display Menu	6-3
6.4	2 Counter Initialization Menu	6-4

<Memo>

6 Maintenance Manual

6.1 Introduction

This chapter provides information on the maintenance mode.

6.2 Overview

The maintenance mode provides the user with functions of displaying and initializing the life counters. It is used in the manufacturing process, adjustment, and maintenance.

The maintenance mode is implemented in the system firmware. All functions are available from the operation panel.



For the details on the operation panel components and functions, refer to "2.3 Part names and functions".

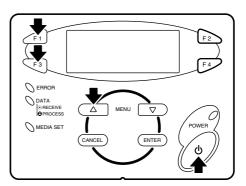
6.3 Operations in Maintenance Mode

This section explains how to start up and operate the maintenance mode as well as provides the list of available diagnosis items.

6.3.1 Starting Up Maintenance Mode

To use the maintenance mode, you must first call up the maintenance menu on the operation panel. The maintenance menu is completely independent of the normal operation mode and setup menu display mode. To call up the maintenance menu, follow the steps below.

- 1. If the system is in the operation mode or the setup menu mode, turn off the system power.
- Press and hold the [F1] key, [F3] key, and [Menu ▲] key simultaneously. While holding down these keys, press [Power] key.
 - The system will enter the maintenance mode and display the maintenance menu.



6.3.2 Operating Maintenance Mode

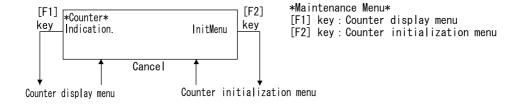
To learn how to operate in the maintenance mode, refer to "5.3 Operations in Self-Diagnosis Mode".

6.4 Maintenance Menu

The maintenance menu includes the following diagnosis items.

Table 6-1 Diagnosis Items in Maintenance Menu

Diagnosis item	Contents	Reference
Counter display	Displays the life counter	飞 6.4.1 Counter Display Menu
Counter initialization	Initializes the life counter	译 6.4.2 Counter Initialization Menu



6.4.1 Counter Display Menu

This menu displays the life counters. It consists of the following diagnosis items.

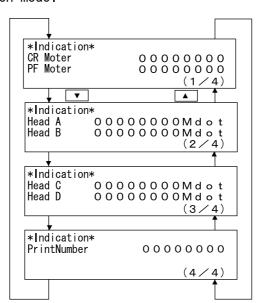
Table 6-2 Diagnosis Items in Counter Display Menu

Diagnosis item	Contents
CR motor	Displays the life counter of the CR motor.
PF motor	Displays the life counter of the PF motor.
Head 1	Displays the life counter of the head unit 1.
Head 2	Displays the life counter of the head unit 2.
Head 3	Displays the life counter of the head unit 3.
Head 4	Displays the life counter of the head unit 4.
Head 5	Displays the life counter of the head unit 5.
Head 6	Displays the life counter of the head unit 6.
Number of total prints	Displays the total number of printed copies.



[°] All life counters are displayed in decimal number.

[°] The diagnosis items of Head 5 and Head 6 are only available with 87-inch models.



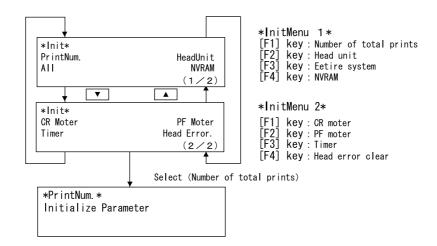
64-inch model

6.4.2 Counter Initialization Menu

This menu initializes the life counters. The parameters that can be initialized in this menu are as follows.

Table 6-3 Diagnosis Items in Counter Initialization Menu

Initialization item	Contents
Number of total prints	Initializes the total print counter.
Head unit	Head unit Initializes the head nozzle life counter.
Entire system	Initializes the timer, life counter, and mechanism counter.
NVRAM	Initializes NVRAM.
CR motor	Initializes the CR motor life counter.
PF motor	Initializes the PF motor life counter.
Timer	Initializes the timer.
Head error clear	Cancels a serious error caused by overcurrent to the printer head.



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7 ADJUSTMENT

7.1	Introduction
7.2	Adjustment Item 7-1
7.3 7.3	Parameter Backup.7-53.1 Jigs and Tools7-53.2 Downloading Backup Parameters7-63.3 Installing Backup Parameters7-6
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7.6 7.6	PF Reduction Belt Tension Adjustment 7-12 5.1 Jigs and Tools
7.7	Head Accuracy Adjustment 7-13
7.8	Cover Sensor Adjustment 7-14
7.9	Platen Height Adjustment

<Memo>

7 Adjustment

7.1 Introduction

This chapter provides information on necessary adjustment items and procedures.



For jigs and tools necessary for adjustment, refer to "10.3 Jig and Tool List".

7.2 Adjustment Item

This section describes the adjustment items required in part replacement procedures. When you adjust or replace any of the service parts listed in "Table 7-1 Adjustment Part List", you must always adjust the printout quality using the self-diagnosis function referring to "Table 7-1 Adjustment Part List".

Table 7-1 Adjustment Part List

Part replaced or adjusted	Adju stme nt orde r	Adjustment item	Reference
Printer head	1	Voltage input	1 5.5.2 Voltage Input Menu
	2	Head nozzle check	下 5.5.3 Head Nozzle Check Menu
	3	Head inclination check	工管 5.5.4 Head Inclination Check Menu
	4	Head accuracy	T 7.7 Head Accuracy Adjustment
	5	Two-way printing position alignment	下 5.5.5 Two-Way Printing Position Alignment Menu
	6	CW adjustment	1 5.5.6 CW Adjustment Menu
	7	Band feed correction	工管 5.5.7 Band Feed Correction Menu
	8	Test drawing	T\$\overline{2}5.5.8 Test Drawing Menu
	9	Reset of head unit life counter	下 5.8.1 Parameter Initialization Menu

Table 7-1 Adjustment Part List (Continued)

Part replaced or adjusted	Adju stme nt orde r	Adjustment item	Reference
MAIN board assembly	1	Parameter backup	了7.3 Parameter Backup
	2	Firmware installation	T\$\frac{1}{2}7.4 Firmware Installation
	3	Skew check	医 5.5.1 Skew Check Menu
	4	Voltage input (no need for initial ink charge)	下5.5.2 Voltage Input Menu
	5	Head nozzle check	LF 5.5.3 Head Nozzle Check Menu
	6	Head inclination check	TF 5.5.4 Head Inclination Check Menu
	7	Two-way printing position alignment	文章 5.5.5 Two-Way Printing Position Alignment Menu
	8	CW adjustment	【實 5.5.6 CW Adjustment Menu
	9	Band feed correction	TF 5.5.7 Band Feed Correction Menu
	10	Side margin	に置 5.5.9 Side Margin Menu
	11	Test drawing	医 5.5.8 Test Drawing Menu
CR motor assembly	1	Steel belt tension adjustment	译7.5 Steel Belt Tension Adjustment
	2	Two-way printing position alignment	T\$\overline{2}\overline{5}\ove
	3	Side margin adjustment	医 5.5.9 Side Margin Menu
	4	Test drawing	工管 5.5.8 Test Drawing Menu

Table 7-1 Adjustment Part List (Continued)

Part replaced or adjusted	Adju stme nt orde r	Adjustment item	Reference
PF motor assembly	1	PF reduction belt tension adjustment	工資7.6 PF Reduction Belt Tension Adjustment
	2	Skew check	L置 5.5.1 Skew Check Menu
	3	Band feed correction	ででは、 Band Feed Correction Menu
	4	Test drawing	下了5.5.8 Test Drawing Menu
P_EDGE sensor assembly	1	Side margin adjustment	飞音5.5.9 Side Margin Menu
Cover sensor assembly	1	Cover sensor adjustment	文章 7.8Cover Sensor Adjustment
PF_ENC assembly	1	PF_ENC inspection	工置 5.4.5 Encoder Menu
	2	Band feed correction	文置 5.5.7 Band Feed Correction Menu
	3	Test drawing	医 5.5.8 Test Drawing Menu
Platen	1	Platen height adjustment	译7.9 Platen Height Adjustment
T fence	1	CR encoder inspection	工管 5.4.5 Encoder Menu
	2	Two-way printing position alignment	Printing Position Alignment Menu
	3	Test drawing	13 5.5.8 Test Drawing Menu
CR driven pulley	1	Steel belt tension adjustment	7.5Steel Belt Tension Adjustment

7.3 Parameter Backup

This section describes how to back up various parameters.

The NVRAM (Flash-Rom and EEPROM) installed on the MAIN board assembly stores various parameters for the system operation.

The available backup parameters are as follows.

- Panel settings
- Mechanism adjustment parameters
- Main board-unique adjustment parameters



The MAIN board-unique adjustment parameters cannot be erased and modified.

If the MAIN board assembly is found to need replacement in service operations, make sure to back up the system parameters before replacing the board. The backup data can be used to restore the original system status, eliminating some adjustment steps.



Before backing up the system parameters, always ensure that the machine power is OFF. Parameter backup with the machine power ON may damage the MAIN board or prevent correct parameter restoration.

7.3.1 Jigs and Tools

The following jigs and tools are required for parameter backup.

• Flash memory card



For further details on the jigs and tools, refer to "10.3 Jig and Tool List".
 Note that the flash memory card used for parameter backup should not be used for any other purposes.

7.3.2 Downloading Backup Parameters

This section describes the procedure to download the backup parameters to the memory card from the existing main board assembly.

Follow the steps below.

- 1. Remove the memory cover.
- 2. Prepare a memory card for parameter backup and insert it in the memory card connector slot (J108) of the MAIN board assembly.



The memory card front face should direct to the inside of the machine.

- 3. Press the Power key in the operation panel.
 - After all lamps in the operation panel light up for an instant, the LCD displays "PLOTTERÅ®CARD".
- 4. Press the Confirm key in the operation panel.
 - The LCD displays "PÅ®C Started".
 - The backup parameter download starts.
- 5. Verify that the backup parameters are downloaded correctly and "PŮC Completed" appears on the LCD.
- 6. Turn the machine power OFF.
- 7. Remove the memory card.

7.3.3 Installing Backup Parameters

This section describes the procedure to install the backup parameters in the memory card to a new MAIN board assembly. Follow the steps below.

1. Insert the memory card with backup parameters in the memory card connector slot of the new MAIN board assembly.



The memory card front face should direct to the inside of the machine.

- 2. Press the Power key in the operation panel.
 - After all lamps in the operation panel light up for an instant, the LCD displays "PLOTTERÅ®CARD".
- 3. Press the Set value ▲ key or the Set value ▼ key to change the display to "CARDÅ®PLOTTER".

- 4. Press the Confirm key in the operation panel.
 - The LCD displays "CÅ®P Started".
 - The backup parameter installation starts.
- 5. Verify that the backup parameters are installed correctly and "CŮP Completed" appears on the LCD.
- 6. Turn the machine power OFF.
- 7. Remove the memory card.
- 8. Install the memory cover.

7.4 Firmware Installation

This section describes the procedure to install the firmware.

The NVRAM (Flash-Rom) on the MAIN board assembly stores the programs (firmware) that control the machine operations.

When performing the following maintenance works, always install the firmware.

- Replacing the MAIN board assembly
- Updating the firmware



Before installing the firmware, always ensure that the machine power is OFF. Firmware installation with the machine power ON may damage the MAIN board or prevent correct data installation.

7.4.1 Jigs and Tools

The jigs and tools required for firmware installation are as follows. Flash memory card or relevant PC



- For further details on the jigs and tools, refer to "10.3 Jig and Tool List".
- Note that the flash memory card used for firmware installation should not be used for any other purposes.

7.4.2 Installing Firmware

This section describes the procedure to install the firmware. Follow the steps below.

(1) Installation using a flash memory card

- 1. Remove the memory cover.
- 2. Prepare a memory card for firmware installation and insert it in the memory card connector slot (J108) of the MAIN board assembly



• The memory card front face should direct to the inside of the machine.

- 3. Turn the machine power ON.
 - The firmware installation starts
 - The firmware installation takes about 60 seconds. During the installation process, the following messages will appear on the LCD of the operation panel in order.
 - "Erase"
 - "Copy"
 - "Compare"
 - "End"
- 4. A buzzer sound signals that the firmware installation has finished correctly.
- 5. Turn the machine power OFF.
- 6. Remove the memory card for firmware installation.
- 7. Install the memory cover.

(2) Installation using a PC

- 1. Turn the machine power OFF as necessary.
- 2. Connect the machine and a PC with a Centronics cable.
- 3. Press the Power key in the operation panel.
 - All lamps light up for an instance.
- 4. Within one second after all lamps light up, press the F2 key in the operation panel.
 - The system enters the firmware installation mode.
- 5. Transmit the new firmware data from the PC.
- 6. A buzzer sound signals that the firmware installation has finished correctly.
- 7. Turn the machine power OFF.

7.5 Steel Belt Tension Adjustment

This section describes the procedure to adjust the steel belt tension. When you have removed and installed the steel belt, always adjust the belt tension.

7.5.1 Jigs and Tools

The following tools are required for steel belt tension adjustment.

• Tension gauge with max. capacity of 500g



For further details on the jigs and tools, refer to "10.3 Jig and Tool List".

7.5.2 Adjusting Steel Belt Tension

To adjust the steel belt tension, follow the steps below.

1. Press the center of the steel belt with a tension gauge.



No.	Part name
1	Steel belt
2	Tension gauge



The steel belt tension specifications are as follows.

64-inch model: 100g ± 10g
87-inch model: 120g ± 10g

2. If the measured tension is outside the specification, adjust the tension using the steel belt tension-adjusting screw.



No.	Part name
1	Steel belt
2	Steel belt tension-adjusting screw



When adjusting the belt tension, ensure that the belt is evenly tight. Uneven tension may break the belt.

7.6 PF Reduction Belt Tension Adjustment

This section describes the procedure to adjust the tension of the PF reduction belt. When you have removed and installed the PF reduction belt, such as for PF motor removal, always adjust the PF reduction belt tension.

7.6.1 Jigs and Tools

The jigs and tools required for PF reduction belt tension adjustment are as follows.

• Tension gauge with max. capacity of 4000g



For further details on the jigs and tools, refer to "10.3 Jig and Tool List".

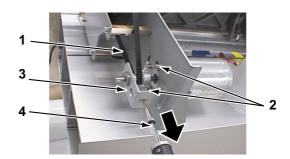
To adjust the PF reduction belt tension, follow the steps below.

- 1. Loosen the two screws retaining the PF motor bracket.
- 2. Attach the tension gauge to the PF motor bracket and pull it in the direction shown in the figure.



The PF belt tension specification is $3,500g \pm 10\%$.

3. Tighten the two screws retaining the PF motor bracket.



No.	Part name
1	PF reduction belt
2	PF motor bracket-retaining screwÅiM4Å~6Åj
3	PF motor bracket
4	Tension gauge

7.7 Head Accuracy Adjustment

This section describes the procedure to adjust the head accuracy.

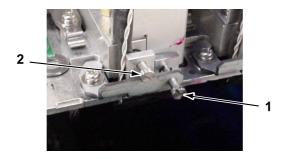
NOTE

Before adjusting the head accuracy, remove the following covers.

- Side cover R: \[\begin{aligned} \begin{alig
- Side cover L: "4.2.2 Removing Side Cover L"
- Front cover: 12"4.2.3 Removing Front Cover"
- Y-axis rail cover: 13"4.2.5 Removing Y-axis rail cover"
- Carriage cover: 13" "4.2.8 Removing Head Cover"

When you have removed and installed the head assembly for part replacement for example, always adjust the head inclination and position in back and forth following the steps below.

- 1. Adjust the head inclination-adjusting screw so that the printed pattern edges of respective colors line up in a line.
- 2. Adjust the head position-adjusting screw so that the printed pattern of respective colors align to the black line and forms a continuous line.



No.	Part name
1	Adjusting screw (inclination)
2	Adjusting screw (back and forth position)

7.8 Cover Sensor Adjustment

This section describes the procedure to adjust the cover sensor.

NOTE

Before adjusting the cover sensor, remove the following covers.

- Side cover R: 12"4.2.1 Removing Side Cover R"
- Side cover L: "4.2.2 Removing Side Cover L"
- Front cover: "4.2.3 Removing Front Cover"

When you have replaced the cover sensor assembly or removed the front cover, always adjust the cover sensor following the steps below.

1. Start up the self-diagnosis function.



To learn how to start up and operate the self-diagnosis function, refer to "5 Self-Diagnosis Function".

- 2. Select "Diagnosis: Sensor" from the Self-diagnosis menu.
- 3. Select "Inspection: Sensor" from the Inspection menu.
- 4. Select "Sensor: etc." from the Sensor menu.
- 5. Verify that the operation panel display "etc.: Cover" changes as follows while opening and closing the front cover assembly.

Table 7-2 Cover Sensor Adjustment

Front cover	Display in operation panel	
Open	Cover: Open	
Close	Cover: Close	

6. If the display in the operation panel differs from the front cover status, adjust the sensor cam position.



No.	Part name
1	Sensor cam
2	Retaining screw

7. Following the instructions in step 5, check the cover sensor assembly again.

7.9 Platen Height Adjustment

This section describes the procedure to adjust the platen height.

7.9.1 Jigs and Tools

The jigs and tools required for platen height adjustment are as follows.

• Platen height-adjusting jig



For further details on the jigs and tools, refer to "10.3 Jig and Tool List".

7.9.2 Adjustment Procedure

Follow the steps below to adjust the platen height.



Before adjusting the platen height, remove the following covers.

- Side cover R: 13" "4.2.1 Removing Side Cover R"
- Side cover L: \[\] "4.2.2 Removing Side Cover L"
- Front cover: 12" "4.2.3 Removing Front Cover"
- Y-axis rail cover: 12" "4.2.5 Removing Y-axis rail cover"

8 MAINTENANCE

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<Memo>

8 Maintenance

8.1 Introduction

This chapter provides information about the periodical services, part life, lubrication/bonding, and transport.



Before starting any maintenance work, always perform the following operations.

- Turn the machine power OFF.
- Disconnect the power plug from the outlet.

 Otherwise, you may suffer electric shock or the machine electric circuits may be damaged.
- Disconnect all cables from the machine. Otherwise, the machine may break down.



- Before performing any maintenance work, ensure that sufficient space is secured around the machine.
- When servicing the machinery inside with some covers removed, exercise extreme caution not to be injured by the driving mechanisms.
- In the periodical services, the following work must be performed with one or more assistant worker.
 - Packaging the machine for transport

8.2 Periodical Services

This section describes the periodical services required for this machine.

The periodical services ensures stable printout quality of the machine.

In the periodical services, some service parts may be checked, cleaned, or replaced.

Perform periodical inspections according to "Table 8-1 Periodical Inspection Part List" and perform cleaning and part replacement as necessary.



- For details of the cleaning procedure, refer to the operation manual.
- For the names and locations of the respective service parts, refer to "10.4 Exploded Views/Service Parts List".

Table 8-1 Periodical Inspection Part List

Part	Timing	Check point	Action
Paper guide L Platen surface	Several times in a year	Paper dust accumulation Foreign objects Foreign objects Damages	Clean it. NOTE If ink deposits are present, remove them with a dampened cloth and wipe the area with a clean dry cloth.
Timing fence (CR encoder detection slit plate)	Several times in a year	Paper dust accumulation Foreign objects Damages	Clean it. If any damages are found, replace the part.
P_REAR sensor surface	Several times in a year	•Paper dust accumulation •Foreign objects	Clean it.

8.3 Part Life Information

This section shows how to check the life of a service part.

To know the life of a service part, check the maintenance counter from the counter display menu in the maintenance mode.

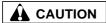


For further details on the counter display menu, refer to "6.4.1 Counter Display Menu".

8.4 Lubrication/Bonding

This section covers the lubrication/bonding information.

After disassembling/assembling this machine, always perform necessary lubrication/bonding according to "Table 8-2 Lubricant List".



Only use specified lubricants and greases. The use of unauthorized lubricants and greases may damage the components and shorten the machine life.

8.5 Transportation of Machine

This section describes how to transport the machine.

Before transporting the machine, you must package it in the same manner as it was delivered using protective materials and packaging materials so that the machine will not be subject to excessive impact and vibrations during the transportation.

Follow the steps below to package the machine.

(1) Task before transportation

- 1. Turn the machine power OFF.
- 2. Verify that the machine is in normal state.
- 3. Clean the printer heads following the instructions in "5.5.10 Head Cleaning Menu".
- 4. Clean the flushing box with jet wash.
- 5. Extract all waste fluid from the waste fluid tank.
- 6. Attach caps.
- 7. Remove all cables including the power cable.
- 8. Fit the machine with protective materials.



For details on protective materials, refer to the operation manual.

9. Package the machine.

(2) Task after transportation

- 1. Unpack, assemble, and install the machine.
- 2. Make the machine ready for operation.

PJ-1614NXE	P I-2216NIXE	Maintenance	Manual
FJ-1014NAE	L7-55 1011VV	iviaii ilei iai ile	ıvıaı ıuaı

9 TROUBLESHOOTING

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9 Troubleshooting

9.1 Introduction

This chapter provides information on possible causes of machine errors/damage and corrective actions. If the machine is malfunctioning and an error message is displayed on the operation panel, refer to "9.2 Troubleshooting with Error Message". If the machine is malfunctioning but no error messages are displayed, refer to "Troubleshooting without Error Message".

9.2 Troubleshooting with Error Message

This section describes the messages displayed in normal operation and upon an error occurrence as well as how to correct the error.

The available messages are as follows.

Table 9-1 Error Message Type

Prio rity	Message type	Contents	Reference
1	Operation status	Displayed when the machine is operating normally.	Status P.2.1 Operation
2	Error with message	Displayed when an abnormal condition occurs during normal operation.	下9.2.2 Errors with Message
3	Data error	Displayed when a data communication error occurs between PC and the machine.	第9.2.3 Data Errors
4	Command error	Displayed when an abnormal condition occurs during analysis of PC commands.	了9.2.4 Command Errors
5	Error requiring reboot	Displayed when a serious error critical to the machine operation occurs.	189.2.5 Errors Requiring Reboot

9.2.1 Operation Status

This section describes the message contents, check items, and corrective actions for normal operation.

Table 9-2 Events and Check Items for Operation Status Messages

No.	Message	Event/ symptom	Check item	Action	Reference
1	Cover open	Front cover is open. Maintenance cover is open.	(1) Is cover sensor assembly loose?	ÅETighten cover sensor assembly screws.	Replacing Cover R Sensor Assembly and Cover L Sensor Assembly
2	Set paper	Lever is up.	(2) Does cover sensor assembly turns ON/OFF correctly as front cover opens and closes?	ÅEAdjust cover sensor assembly height.	下了.8 Cover Sensor Adjustment
			(3) Is cover sensor assembly cable connected securely?	ÅECorrectly connect cover sensor assembly cables to MAIN board assembly connectors J128, J129 and J130.	13.2Replac ing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(4) Is transmission type photo sensor fitted correctly?	ÅEInstall transmission type photo sensor correctly.	Replacing Transmission Type Photo Sensor
			(5) Is transmission type photo sensor face contaminated?	ÅEClean sensor face using a swab.	Replacing Transmission Type Photo Sensor

Table 9-2 Events and Check Items for Operation Status Messages (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
			(6) Is transmission type photo sensor connected securely?	ÅECorrectly connect transmission type sensor assembly cables to MAIN board assembly connectors J118 and J120.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(7) Panel board assembly may be damaged.	ÅEReplace panel board assembly.	工艺4.2.4 Replacing Panel Board Assembly
			(8) Panel cable may be damaged.	ÅEReplace panel cable.	工艺4.2.4 Replacing Panel Board Assembly
			(9) Check cover sensor assembly operation from "Sensor: etc." of self- diagnosis function.	ÅEReplace cover sensor assembly.	Replacing Cover R Sensor Assembly and Cover L Sensor Assembly
			(10) Check transmission type sensor assembly operation from "Sensor: etc." of self-diagnosis function.	ÅEReplace transmission type sensor assembly.	Replacing Transmission Type Photo Sensor
			(11) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-2 Events and Check Items for Operation Status Messages (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
3	No paper	No paper is set.	(1) Is P_EDGE sensor assembly at cursor connected correctly?	ÅESecurely connect it to CR_BASE board assembly connector J004.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		assembly under paper guide R connected correctly? (3) CR_HEAD board assembly and CR_BASE board assembly and CR_BASE board assembly may be damaged. (4) Check if sensor is ON from "Sensor: etc." of self-diagnosis function. AEIf this message a though paper is set, P_REAR sensor ass	ÅESecurely connect it to MAIN board assembly connector J117.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	
			assembly and CR_BASE board assembly may be	ÅEReplace CR_HEAD board assembly and CR_BASE board assembly.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
			from "Sensor: etc." of self-	ÅEIf this message appears though paper is set, replace P_REAR sensor assembly.	L曾4.4.3 Replacing P_REAR_R sensor assembly
				ÅEReplace CR tape wire assembly.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
			(6) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

9.2.2 Errors with Message

This section describes the contents of errors with messages as well as the check items and corrective actions.

These messages are displayed when an abnormal condition occurs while the machine is running.

Upon an occurrence of an error with message, the machine stops its operation at the same time.

The error can be cancelled by removing the error causes. After that, the machine will restart its operation.

Table 9-3 Symptoms and Check Items for Errors with Message

No.	Message	Event/ symptom	Check item	Action	Reference
1	Paper detection error		(1) Is P_EDGE sensor assembly at cursor connected correctly?	ÅESecurely connect it to CR_BASE board assembly connector J004.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
			(2) Is P_REAR sensor assembly under paper guide R connected correctly?	ÅESecurely connect it to MAIN board assembly connector J117.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(3) Is CR tape wire inserted obliquely?	Reconnect following connectors. ÅESUB board assembly: J006 - J007 ÅECR_BASE board assembly: J1 - J2 ÅECR_HEAD board assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(4) CR tape wire may be broken.	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
			(5) CR_HEAD board assembly and CR_BASE board assembly may be damaged.	ÅEReplace CR_HEAD board assembly and CR_BASE board assembly.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
			(6) Check if P_REAR sensor is ON from "Sensor: etc." of self-diagnosis function.	ÅEIf this message appears though paper is set, replace P_REAR sensor assembly.	Replacing P_REAR_R sensor assembly
			(7) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
2	Paper skew error	Paper is running obliquely.	(1) Set paper again and check repeatability.	ÅEIf this error is caused by user's inappropriate paper setting, instruct correct paper setting procedure.	Å\

Table 9-3 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
3	Roll paper end	This error is issued when paper end is	(1) Turn machine OFF. Turn it ON again and check if the same message appears.	If message appears: E Step (2)	Å\
		detected in roll paper mode. Lifting lever upward cancels this error.	(2) Check contact of P_REAR sensor assembly.	ÅEReconnect MAIN board assembly connector J117. If machine does not initialize paper, sensor may be damaged. Replace P_REAR sensor assembly.	Replacing P_REAR_R sensor assembly
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
4	[] Little ink	Ink is running short. Printout is possible.	(1) Check for ink end from "Sensor: etc." of self-diagnosis function.	ÅECheck if ink end display from "Sensor: etc." changes when moving level switch up and down.	LT 5.4.4 Sensor Menu
5	[] No ink	Ink has run out. Any printout operation stops immediately.	(1) Check level switch connector for contact.	ÅEReconnect following connectors. ÅEJ2(K) ÅEJ3(Y) ÅEJ4(Lm) ÅEJ5(M) ÅEJ6(Lc) ÅEJ7(C) ÅEJ10(JW) ÅEJ11(waste fluid)	E 4.9.1 Replacing TERM_TANK Board Assembly
6	6 Warning: Waste fluid tank		(1) Turn machine OFF. Turn it ON again and check if the same message appears.	ÅEIf message appears: TS Step (2)	Å\
			(2) Waste ink in waste fluid tank reaches full level.	ÅEDispose of waste fluid in waste fluid tank.	Å\
			(3) TERM_TANK board assembly may be damaged.	ÅEReplace TERM_TANK board assembly.	Replacing TERM_TANK Board Assembly

Table 9-3 Symptoms and Check Items for Errors with Message (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
7	Warning: Ink tube life has almost expired.	(1) Turn machine OFF. Turn it ON again and check if the same message appears.	If message appears: LES Step (2)	Å\	
			(2) Use of ink tube has exceeded specified level.	ÅEReplace ink tube.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

NOTE

• The square bracket pair in an error message contains the applicable ink color.

9.2.3 Data Errors

This section describes the message contents of data errors as well as the check items and corrective actions.

These errors are displayed when a communication error occurs between the PC and the machine.

Upon an occurrence of a data error, the machine stops its operation at the same time.

The error can be cancelled by removing the error causes. After that, the machine will restart its operation.

Table 9-4 Symptoms and Check Items for Data Errors

No.	Message	Event/ symptom	Check item	Action	Reference
1	I 15-1 error command []	Online frame error	(1) Is there any error-triggering statement in	ÅEReplace application driver.	译4.3.2 Replacing MAIN
2	I 15-2 error command []	Overrun error	drawing data?	ÅEReplace MAIN board	Board Assembly, DIMM, MOTHER Board
3	I 15-3 error command []	Online parity error	(2) MAIN board assembly may be defective.	assembly.	Assembly, HDD_MOTHER Board Assembly
4	I 15-4 error command []	Sum check error			
5	I 15-5 error command []	ESC parameter			
6	I 15-6 error command []	Undefined ESC			
7	I 15-7 error command []	Unauthorized character ESC			
8	I 15-8 error command []	Numeral character ESC			
9	I 15-9 error command []	Parameter error ESC			
10	I 15-10 error command []	Buffer overflow			



The square bracket pair in a message may contain the applicable command code.

9.2.4 Command Errors

This section describes the message contents of command errors as well as the check items and corrective actions.

These errors are displayed when an abnormal condition is found during analysis of PC command data. Upon an occurrence of a command error, the machine stops its operation at the same time.

The error can be cancelled by removing the error causes. After that, the machine will restart its operation.

Table 9-5 Symptoms and Check Items for Command Errors

No.	Message	Event/ symptom	Check item	Action	Reference			
1	MH01 Error Command []	Undefined command: Command being analyzed is not defined in applicable command mode.	triggering statement in drawing data? (2) MAIN board assembly	triggering statement in drawing data? (2) MAIN board assembly ÅEReplace MAIN board	triggering statement in driver (2) MAIN board assembly may be defective assembly assembly assembly	triggering statement in drawing data? (2) MAIN board assembly may be defective. driver Repl Boar DIM MO' Assembly.	triggering statement in drawing data? (2) MAIN board assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER
2	MH 02 Error Command []	Parameter error: Number of parameters following command is inappropriate.			Board Assembly			
3	MH 03 Error Command []	Numeral value error: Number of parameters following command is inappropriate.						
4	MH 04 Error Command []	Undefined character set: Unknown character set is present.						
5	MH 05 Error Command []	Buffer overflow: Polygon buffer or downloadable character buffer overflows.						

NOTE

- The square bracket pair in a message may contain the applicable command code.
- For the PC settings, refer to your PC's operation manual.

9.2.5 Errors Requiring Reboot

This section describes the contents of reboot-requiring errors as well as the check items and corrective actions.

These errors are issued when any of the following critical problems occurs.

ÅEObstacle that prevents the machine's operation

ÅEMalfunction of electric circuits (boards, motors, sensors)

ÅEAbnormal operation of control programs

ÅEError that requires system reboot.

When any of the above conditions occurs, the machine follows the steps shown below before stopping its operation.

- 1. Turn OFF the driving system power.
- 2. Light up all lamps in the operation panel and generate intermittent audible alarm.
- 3. Display the applicable error message on the LCD.

The error can be cancelled by removing the error causes and restarting the machine.

(1) CPU system serious error

Table 9-6 Symptoms and Check Items for CPU System Serious Errors

No.	Message	Event/ symptom	Check item	Action	Reference
1	E 001 error DRAM	Standard DRAM error: Abnormal condition in standard memory mounted on MAIN board assembly.	(1) MAIN board assembly may be defective.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
2	E 002 error Opt. DRAM	Option DRAM error: Abnormal condition in optional memory mounted on MAIN board assembly.	(1) Dust in extended memory slot (J107) may cause error.	ÅERemove dust using compressed air and reinstall memory.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(2) Mount known good optional memory (with the same size as that in question) and check memory size from "Inspection: Memory size" of self-diagnosis function.	ÅEReplace memory.	
			(3) MAIN board assembly may be defective.	ÅEReplace MAIN board assembly.	

Table 9-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference	
3	E 016 error CPU ErrÅm00Ån	Interruption exception error: Abnormal condition in interruption process	(2) Check repeatability by cycling machine power ON/OFF several times. Make	and printer peripherals. (2) Check repeatability by cycling machine power ON/	ad printer peripherals. assembly. Replace Board O Check repeatability by a cling machine power ON/ FF several times. Make MOTI	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly,
4	E 016 error CPU ErrÅm02Ån	Command border exception error: Abnormal condition in command border	repeatedly even if no problems seem to be present. (3) MAIN board assembly may be defective.		HDD_MOTHER Board Assembly	
5	E 016 error CPU ErrÅm03Ån	Data border error: Abnormal condition in data boarder				
6	E 016 error CPU ErrÅm04Ån	Address exception error (load or command fetch): Address error in command loading or fetching				
7	E 016 error CPU ErrÅm05Ån	Address exception error (store): Address error in clearing process				
8	E 016 error CPU ErrÅm06Ån	Address exception error (command fetch): Address error in command loading or storing				

Table 9-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
9	E 016 error CPU ErrÅm07Ån	Bus exception error (Command fetching): Bus error in command loading or storing			
10	E 016 error CPU ErrÅm08Ån	System call exception error: Abnormal condition in system call			
11	E 016 error CPU ErrÅm09Ån	Break point exception error: Abnormal condition in break point			
12	E 016 error CPU ErrÅm10Ån	Reserved command exception error: Abnormal condition in reserved command			
13	E 016 error CPU ErrÅm03Ån	Coprocessor- disabling exception error: Abnormal condition in coprocessor			
14	E 016 error CPU ErrÅm12Ån	Processing overflow exception error: overflow occurs			

Table 9-6 Symptoms and Check Items for CPU System Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
15	E 016 error CPU ErrÅm13Ån	Trap exception error: Trap occurs			
16	E 016 error CPU ErrÅm15Ån	Floating point exception error: Abnormal condition in floating point process			
17	E 016 error CPU ErrÅm22Ån	Watch exception error: Abnormal condition in Watch process			
18	E 016 error CPU ErrÅm32Ån	Watchdog timeout exception error: Timeout in watchdog			
19	E 016 error CPU ErrÅm33Ån	Abort error: Aborted			

NOTE

For the PC settings, refer to your PC's operation manual.

(2) Mechanical Serious Errors

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors

No.	Message	Event/ symptom	Check item	Action	Reference
1	E065 error Paper feed motor	Abnormal condition in PF motor (X-axis) during machine	(1) Check error history from "Test: History" of self-diagnosis function.	Å\	飞音5.4.7 History Menu
		operation. This error is issued when encoder feedback largely differs from motor command.	(2) Set endurance running cycles to 50 or more from "Life: PF motor" of self-diagnosis function and check if X-axis motor error is issued.	ÅECheck connection of following connectors in MAIN board assembly: ÅEPF motor cable assembly connector J127	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly,
2	E067 error Paper feed encoder	Abnormal condition in paper feed amount (X-axis) during machine operation.	(3) Check "Encoder: PF" under "Test: Encoder" of self-diagnosis function.	ÅEPF_ENC assembly connector J132	HDD_MOTHER Board Assembly
		This error is issued when encoder returns no feedback.	(4) PF motor assembly may be damaged.	ÅEReplace PF motor assembly.	137 4.4.1 Replacing PF Motor Assembly
3	E069 error Paper feed timeout	Timeout in paper feed amount (X-axis) during machine operation. This error is issued when pressure roller does not reach specified point.	(5) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
4	E071 error Paper feed overcurrent	PF motor (X-axis) is overloaded during machine operation.			

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
5	E066 error Carriage motor	Abnormal condition in CR motor (Y-axis) during machine operation. This error is issued when encoder feedback largely differs from motor command.	(1) Check error history from "Test: History" of self-diagnosis function. (2) With machine power OFF, move carriage laterally by hand to check for any drag. (3) Set endurance running cycles to 50 or more from "Life: CR motor" of self-diagnosis function and	Å\ ÅEClean and lubricate CR rail roller runner. ÅECheck following connectors for proper connection. Main board ÅECR motor assembly connector: J131 SUB board ÅECR tape wire: J006 -	History Menu F 8.4 Lubrication/ Bonding F 4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly,
6	E068 error Carriage encoder	Abnormal condition in head travel (Y-axis) during machine operation. This error is issued when encoder returns no feedback.	check if Carriage motor error is issued. (4) Check T fence for dirt, wear. (5) Check "Encoder: Y" under "Test: Encoder" of self-diagnosis function. (6) MAIN board assembly may be damaged.	J007 CRBASE board ÅECR tape wire: J1 - J2 ÅECR_ENC assembly connector: J005 ÅEIf grease or dust deposits are present: Wipe with dry cloth. ÅEIf ink deposits are present: Lightly wipe them	HDD_MOTHER Board Assembly LF 4.5.5 Replacing T Fence LF 4.5.2 Replacing CR Motor Assembly LF 4.7.2
7	E068 error Carriage encoder	Abnormal condition in head travel (Y-axis) during machine operation. This error is issued when encoder returns no feedback.		away with cloth moistened with neutral detergent. ÅEIf too much contaminated to clean: Replace T fence. ÅEa) If NG: Check following connector for proper connection. ÅECR_BASE board	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly LF 4.5.7 Replacing Steel Bearer, Tube Guide, CR Tape
8	E068 error Carriage encoder	Abnormal condition in head travel (Y-axis) during machine operation. This error is issued when encoder returns no feedback.		assembly connector J005 ÅEb) Replace following parts. ÅET fence ÅECR motor assembly ÅECR_BASE board assembly ÅECR tape wire ÅEReplace MAIN board assembly.	Wire, and Intake Tube LF 4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
9	E073 error Origin detection	CR_HP cannot be detected.	(1) Check transmission type photo sensor from "Sensor: etc." of self-diagnosis function.	ÅECheck transmission type photo sensor assembly for proper connection.	I 5.4.4 Sensor Menu
			(2) Transmission type photo sensor may be damaged.	ÅEReplace transmission type photo sensor.	Replacing Transmission Type Photo Sensor
				(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.
10	E 074 error Cover	Abnormal condition in cover sensor.	(1) Check cover sensor from "Sensor: etc." of self-diagnosis function.	ÅECheck cover sensor assembly for proper connection.	₹5.4.4 Sensor Menu
			(2) Cover sensor assembly may be damaged.	ÅEReplace cover sensor assembly.	Replacing Cover R Sensor Assembly and Cover L Sensor Assembly
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
11	E075 error Head overcurrent	Abnormal condition due to printer head overload during machine operation.	(1) HEAD board assembly may be damaged.	ÅEReplace HEAD board assembly. ÅECancel head error.	Replacing HEAD Board Assembly LF 6.4.2 Counter Initialization Menu
			(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
				ÅECancel head error.	Counter Initialization Menu
			(3) Head assembly may be damaged.	ÅEReplace head assembly.	又是4.6.2 Replacing Head Assembly
				ÅECancel head error.	Counter Initialization Menu
12	E 076 error PG origin detection	HD_SLID origin cannot be detected.	(1) Check HD_SLIDE sensor from "Sensor: Head slide" of self-diagnosis function.	ÅECheck HD_SLIDE sensor assembly connector.	工管 5.4.4 Sensor Menu
			(2) Check HD_SLIDE sensor assembly for proper connection.	ÅEReplace HD_SLIDE sensor assembly.	Replacing HD_SLIDE Sensor Assembly
			(3) SLIDE motor assembly may be damaged.	ÅEReplace SLIDE motor assembly.	工資4.5.3 Replacing SLID Motor Assembly
			(4) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 6.4.2 Counter Initialization Menu

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
13	E 077 error Head overheat	Abnormal condition in head driver.	(1) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 6.4.2 Counter Initialization Menu
14	cable condition in head cable or head thermister.	(1) Check if head cables are securely locked at CR_HEAD board assembly and head board assembly connectors.	ÅEReconnect head cable.	L 著 4.6.1 Replacing HEAD Board Assembly L 著 4.7.2	
		(2) Is head cable broken?	ÅEReplace head cable.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly	
			(3) Head thermister may be malfunctioning.	ÅEReplace thermister.	文章 4.6.3 Replacing Cartridge Heater and Thermister
15	E 079 error Lever overcurrent	Lever motor is overloaded during machine	(1) Lever motor may be damaged.	ÅEReplace lever motor.	足 4.4.4 Replacing Lever Motor Assembly
		operation.	(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 6.4.2 Counter Initialization Menu

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
16	E 080 error Lever sensor	Abnormal condition in lever sensor.	(1) Lever sensor assembly may be damaged.	ÅEReplace transmission type photo sensor.	Replacing Transmission Type Photo Sensor
			(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 6.4.2 Counter Initialization Menu
17	E 081 error CR cable	Abnormal condition in CR cable.	(1) Check CR cable for proper connection from "Sensor: Cable" of self-diagnosis function.	ÅEReconnect CR cable to connectors.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly LF 4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
			(2) Is CR cable broken?	ÅEReplace CR cable.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference	
18	18 E 082 error Sub tank cable Abnormal condition in sub tank cable.	condition in sub	(1) Is sub tank cable disconnected?	ÅEReconnect sub tank cable.	图 4.7.1 Replacing Sub	
		(2) Is sub tank cable brok	(2) Is sub tank cable broken?	ÅEReplace sub tank cable.	Tank Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly	
		(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly		
19	E 083 error Pump cable Abnormal condition in pump cable.	_	condition in pump	(1) Check pump cable for proper connection from "Sensor: Cable" of self- diagnosis function.	ÅEReconnect pump cable.	Replacement of Ink Supply Section
			(2) Is pump cable broken?	ÅEReplace pump cable.	Components 工資4.3.1 Replacing SUB Board Assembly	
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	
20	E 084 error Ink tank cable	Abnormal condition in ink	(1) Is ink tank cable disconnected?	ÅEReconnect ink tank cable.	足 4.3.1 Replacing SUB	
			(2) Ink tank cable may be broken.	ÅEReplace ink tank cable	Board Assembly LF 4.10.1 Replacing TERM_ROLL Board Assembly	
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference	
21	E 086 error Head thermister	Abnormal condition in head thermister.	(1) Check head temperature reading from "Sensor: Temperature" of self-diagnosis function.	ÅEReconnect thermister connector.	足管 5.4.4 Sensor Menu	
			(2) Thermister may be damaged.	ÅEReplace thermister.	Replacing Cartridge Heater and Thermister	
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	E 4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	
22	thermister cond		hermister condition in platen thermister.	(1) Check platen temperature reading from "Sensor: Temperature" of self-diagnosis function.	ÅEReconnect thermister assembly connector.	1 5.4.4 Sensor Menu
			(2) Thermister assembly may be damaged.	ÅEReplace thermister assembly.	Replacing Heater and Thermister Assembly	
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	
23	E 088 error Dry thermister		(1) Check dry temperature reading from "Sensor: Temperature" of self-diagnosis function.	ÅEReconnect thermister assembly connector.	工管 5.4.4 Sensor Menu	
			(2) Thermister assembly may be damaged.	ÅEReplace thermister assembly.	Replacing Heater and Thermister Assembly	
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	

Table 9-7 Symptoms and Check Items for Mechanical Serious Errors (Continued)

No.	Message	Event/ symptom	Check item	Action	Reference
24	E 089 error Winding motor rotation (only for 87-inch model)	Abnormal condition in winding motor rotation	(1) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM,
25	E 097 error Ink pump	Abnormal condition in ink pump.			MOTHER Board Assembly, HDD_MOTHER Board Assembly
26	E 100 error Vacuum pump	Abnormal condition in vacuum pump.			2011011200111019
27	E 101 error Sub tank sensor	Abnormal condition in sub tank sensor.	(1) Sub tank sensor assembly may be damaged.	ÅEReplace sub tank assembly.	至4.7.1 Replacing Sub Tank Assembly
			(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
28	E 113 error NVRAM	Parameters cannot be written.	(1) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
29	E 161 error Ink tube life	Ink tube life has expired.	(1) Turn machine OFF. Turn it ON again and check if the same message appears.	ÅEIf message is displayed: The step (2)	-
			(2) Use of ink tube has exceeded specified limit.	ÅEReplace ink tube.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
			(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

9.3 Troubleshooting without Error Message

This section describes the symptoms of errors without an error message as well as the check items and corrective actions.

9.3.1 Initial Operation Problems

Table 9-8 Symptoms, Check Items and Actions for Initial Operation Problems

No.	Symptom	Check item	Action	Reference
1	Machine power cannot be turned ON	(1) Is panel unit cable assembly broken or shorted?	ÅEReplace panel cable.	13 4.2.4 Replacing Panel
		(2) Panel board assembly may be damaged.	ÅEReplace panel board assemby.	Board Assembly
2	Abnormal LCD operation (no displays/garbage characters)	(1) Check panel cable for proper connection at panel unit assembly and MAIN board assembly. ÅEIs panel cable inserted obliquely? ÅEIs connector securely locked?	ÅEReconnect following connectors. ÅEMain board: J109 ÅEPanel unit assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
		(2) Panel cable may be damaged.	ÅEReplace panel cable.	Replacing Panel Board Assembly
		(3) Is panel unit LCD damaged?	ÅEReplace panel board assembly.	L置 4.2.4 Replacing Panel Board Assembly
		(4) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-8 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
3	Initial ink charge not available	(1) Is "Cover open" displayed on LCD with front cover closed?	ÅEAdjust cover sensor.	飞 7.8 Cover Sensor Adjustment
		(2) Check panel cable for proper connection at panel unit assembly and MAIN board assembly. locked? ÅEIs panel cable inserted obliquely? ÅEIs connector securely locked?	ÅEReconnect following connectors. ÅEMAIN board assembly: J109 ÅEPanel unit assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
		(3) Is "Lever up" displayed on LCD with pressure arm lowered?	ÅEReplace transmission type photo sensor.	E 4.4.6 Replacing Transmission Type Photo Sensor
		(4) Check MAIN board assembly connectors J118 and J120 for proper connection.	ÅEReconnect connectors.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
		(5) Level switch may be damaged.	ÅEReplace level switch	Replacing Main Bottle, Bottle Cap, Ink Cap, and Ink Level Switch
		(6) Is CR cable broken?	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(7) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
4	Though initial charge has started, ink does not reach head.	(1) Ink pump assembly may be malfunctioning.	ÅEReplace ink pump assembly.	LF 4.8.1 Replacing Ink Pump
		(2) Air pump assembly may be malfunctioning.	ÅEReplace air pump assembly.	又是4.8.2 Replacing Air Pump

Table 9-8 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
5	Ink is not discharged though ink charge is finished.	(1) Ink amount may be detected incorrectly due to malfunction of INK_SENSE board assembly in sub tank.	ÅEReplace sub tank assembly.	图 4.7.1 Replacing Sub Tank Assembly
		(2) Check head cable connectors at CR_HEAD board assembly and HEAD board assembly. ÅEIs head cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect head cable.	T會 4.6.1 Replacing HEAD Board Assembly T會 4.7.2 Replacing CR_BASE
		(3) Is head cable broken?	ÅEReplace head cable.	Board Assembly and CR_HEAD Board Assembly
		(4) Is CR_BASE board malfunctioning?	ÅEReplace CR_BASE board assembly.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(5) Check CR cable connectors at CR_BASE board assembly and SUB board assembly. ÅEIs CR cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect CR cable.	Replacing SUB Board Assembly L 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(6) Is CR cable broken?	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(7) Is CR_HEAD board assembly malfunctioning?	ÅEReplace CR_HEAD board assembly.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(8) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly.	12 4.3.1 Replacing SUB Board Assembly
		(9) MAIN board assembly may be malfunctioning.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-8 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
6 7 8 9	6 Machine makes no operations after turned ON. 7 After turned ON, machine displays "Initializing" and resets itself. Machine does not perform initialization even if paper is set. Machine does not start 9 operation even if front cover is closed. Machine does not stop even if	(1) Is "Cover open" displayed on LCD with front cover closed? Or, is cover sensor assembly judged as normal when checked through "Test: Sensor" of self-diagnosis function?	ÅEAdjust cover sensor. ÅEReconnect MAIN board assembly connectors J128 and J129. ÅEReplace cover sensor assembly.	T 7.8 Cover Sensor Adjustment L 4.3.2 Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly L 4.5.8 Replacing Cover R Sensor Assembly and Cover L Sensor Assembly
		(2) Check panel cable connectors at panel unit assembly and MAIN board assembly. ÅEIs panel cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect following connectors. ÅEMAIN board assembly: J109 ÅEPanel unit assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
		(3) Is "Set paper" displayed on LCD with pressure arm lowered?	ÅEReconnect MAIN board assembly connectors J118 and J120. ÅEReplace transmission type photo sensor.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 4.4.6 Replacing Transmission Type Photo Sensor

Table 9-8 Symptoms, Check Items and Actions for Initial Operation Problems (Continued)

No.	Symptom	Check item	Action	Reference
		(4) Is P_REAR sensor assembly judged as normal when checked through "Test: Sensor" of self-diagnosis function?	ÅEReconnect MAIN board assembly connector J117. ÅEReplace P_REAR sensor assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 4.4.3 Replacing P_REAR_R sensor assembly
		(5) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
11	Operation panel accepts no inputs.	(1) Is operation panel cover broken or contaminated?	ÅEReplace operation panel cover.	-
		(2) Check panel cable connectors at panel unit assembly and MAIN board assembly. ÅEIs panel cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect following connectors. ÅEMAIN board assembly: J109 ÅEPanel unit assembly	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
		(3) Panel unit assembly may be damaged.	ÅEReplace panel board assembly.	Replacing Panel Board Assembly
		(4) MAIN board assembly may be malfunctioning.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
12	Machine prints nothing though it receives data.	(1) Refer to "9.3.5 Online Function Problem".	-	工管 9.3.5 Online Function Problem

9.3.2 Paper Feed Problems

Table 9-9 Symptoms, Check Items and Actions for Paper Feed Problems

No.	Symptom	Check item	Action	Reference
1 2 3 4 5	Paper comes off during paper set initialization or printout. Paper runs obliquely or meanders during paper set initialization or printout. Paper crinkles during paper set initialization or printout. Paper jams during paper set initialization or printout. Machine registers wrong paper size after paper set initialization.	(1) Are P_REAR sensor assembly and P_EDGE sensor assembly judged as normal when checked through "Test: Sensor" of self-diagnosis function?	ÅECheck following connectors. ÅEMAIN board assembly: J117 ÅECR_BASE board assembly: J004 ÅEReplace P_REAR sensor assembly and P_EDGE sensor assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly LF 4.4.3 Replacing P_REAR_R sensor assembly LF 4.6.4 Replacing P_EDGE Sensor Assembly
		(2) Does pressure roller drag when pressure arm is raised?	ÅEIf pressure roller collects paper dust on itself, wipe dust away using a wet soft cloth.	Coperation manual
		(3) Does paper guide F have large distortion or foreign objects?	ÅEIf paper guide F collects paper dust or other foreign objects on it, remove them. ÅEReplace paper guide F.	Karata 4.2.6 Removing Paper Guide F
		(4) Are flanges attached correctly?	ÅEInsert flanges correctly into core pipe of paper roll.	CF Operation manual

9.3.3 Drawing Problems

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems

No.	Symptom	Check item	Action	Reference
1	Machine cannot draw sequentially	(1) Program ROM may be defective.	ÅEUpdate firmware.	工管7.4 Firmware Installation
		(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
2	Paper feed after printout is excessive.	(1) Is P_REAR sensor assembly judged as normal when checked through "Test: Sensor" of self-diagnosis function?	ÅEReconnect MAIN board assembly connector J117. ÅEReplace P_REAR sensor assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 4.4.3 Replacing P_REAR_R sensor assembly
		(2) Program ROM may be defective.	ÅEUpdate firmware.	工管7.4 Firmware Installation
		(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
3	Missing dots in printout.	(1) Perform purge twice consecutively.		CF Operation manual
		(2) Perform "Drawing: Nozzle check" of self- diagnosis function or test drawing.	ÅEIf nozzle check patterns are printed out correctly: The step (4)	医 5.5.8 Test Drawing Menu

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
4	Nozzle plugging or ink splash is not eliminated even after ink purge.	(1) Is registered head voltage different from actual head voltage?	ÅEEnter correct head voltage.	Voltage Input Menu
		(2) Does residual ink collect on head assembly or in nozzles?	ÅEClean head as follows. 1) Clean head through "Adjustment: Head cleaning" of self-diagnosis function. 2) Perform initial charge through "Adjustment: Voltage input". 3) Check printouts again.	に置5.5.10 Head Cleaning Menu に置5.5.2 Voltage Input Menu
		(3) Check if CR_ENC assembly and T fence contact with each other.	ÅEIf they contact with each other, adjust CR_ENC assembly and T fence positions. ÅEIf problem remains even after position adjustment, replace CR_ENC assembly and T fence.	Replacing T Fence Fence Fence Fence Fence CF-4.7.3 Replacing CR_ENC Assembly
		(4) Is head assembly damaged?	ÅEReplace damaged head assembly.	工資4.6.2 Replacing Head Assembly
		(5) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference	
5 6	No printout. Particular color is missing.	(1) Is CR cable inserted obliquely?	ÅEReconnect following connectors:SUB board assembly J006 - J013, CR_BASE board assembly J1 - J2, CR_HEAD board assembly J1, J3, J5, J7, J9	Replacing SUB Board Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly	
		(2) CR cable may be damaged	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube	
		(3) Does ink tube have bend, scratch, or leak?	ÅEReplace damaged ink tube.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube	
		(4) Check head cable connectors at CR_HEAD board assembly and HEAD board assembly. ÅEIs head cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect head cable.	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly	
			(5) Is head assembly damaged?	ÅEReplace damaged head assembly.	工資4.6.2 Replacing Head Assembly
				(6) CR_HEAD assembly may be malfunctioning.	ÅEReplace CR_HEAD assembly
		(7) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly	文章 4.3.1 Replacing SUB Board Assembly	
		(8) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly	

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
7	Machine outputs all black drawing.	(1) Check head cable connectors at CR_HEAD board assembly and HEAD board assembly. ÅEIs head cable inserted obliquely? ÅEIs it locked securely?	ÅEReconnect head cable.	Replacing HEAD Board Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(2) Is CR cable inserted obliquely?	ÅEReconnect following connectors:SUB board assembly J006 - J013, CR_BASE board assembly J1 - J2, CR_HEAD board assembly J1, J3, J5, J7, J9	Replacing SUB Board Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(3) CR cable may be damaged	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(4) Is head assembly damaged?	ÅEReplace damaged head assembly.	文章 4.6.2 Replacing Head Assembly
		(5) CR_HEAD assembly may be malfunctioning.	ÅEReplace CR_HEAD assembly	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(6) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly	又是4.3.1 Replacing SUB Board Assembly
		(7) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
8 9 10 11	Blocky printout quality. Blocky image printout. CR line seems dotted. White or black lines appear.	(1) Is working environment appropriate?	ÅEUse machine under specified environment.	Conditions of the installation environment
		(2) Have you started printout immediately after initial charge?	Printout just after initial charge may cause following symptoms. ÅEPrinted line blurs. ÅEWhite lines appear. In such cases, perform purge twice or three times and check printout again. If symptoms remain even after purging, leave machine unused for 1 hour or more. Then perform ink purge and check printout.	I實 Operation manual
		(3) Is PF belt tension adjusted to specification?	ÅEAdjust PF reduction belt tension.	Reduction Belt Tension Adjustment
		(4) Is nozzle face wiped correctly?	ÅEClearly wipe it away using a wiper.	Deperation manual
		(5) Is T fence dirty?	ÅEClean T fence. ÅEIf T fence is still dirty or damaged, replace T fence.	LF 4.5.5 Replacing T Fence
		(6) Does pressure roller drag when pressure arm is raised?	ÅEIf pressure roller collects paper dust on itself, wipe dust away using a wet soft cloth.	Operation manual
		(7) Is registered head voltage different from actual head voltage?	ÅEEnter correct head voltage.	又是 5.5.2 Voltage Input Menu
		(8) Does residual ink collect on head assembly or in nozzles?	ÅEClean head as follows. 1) Clean head through "Adjustment: Head cleaning" of self-diagnosis function. 2) Perform initial charge through "Adjustment: Voltage input". 3) Check printouts again.	区 5.5.10 Head Cleaning Menu 区 5.5.2 Voltage Input Menu
		(9) Is head assembly damaged?	ÅEReplace damaged head assembly.	工管 4.6.2 Replacing Head Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
		(10) CR_HEAD assembly may be malfunctioning.	ÅEReplace CR_HEAD assembly	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(11) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly	Replacing SUB Board Assembly
		(12) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
12	Printout borders blur.	(1) Does purge correct symptom?	ÅEPerform purge twice consecutively.	CF Operation manual
		(2) Is paper in use a recommended one?	ÅESet recommended paper and check printout again. With non-authorized paper, paper sensor may fail to detect paper correctly.	Operation manual
		(3) CR cable may be damaged	ÅEReplace CR tape wire.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(4) Is head assembly damaged?	ÅEReplace damaged head assembly.	Replacing Head Assembly
		(5) CR_HEAD assembly may be malfunctioning.	ÅEReplace CR_HEAD board assembly	Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly
		(6) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly	Replacing SUB Board Assembly
		(7) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
13 14 15	Many satellites (unnecessary dots) Shaggy printout Uneven lines	(1) Is working environment appropriate?	ÅEUse machine under specified environment.	Conditions of the installation environment
		(2) Is ink sufficient?	ÅEAdd ink.	Toperation manual
		(3) Perform purge three times consecutively.	ÅEPrint out drawing again.	Operation manual
		(4) Perform test drawing.	ÅEIf nozzle check patterns are printed correctly, refer to step (6).	-
		(5) Have you started printout immediately after initial charge?	ÅEBe sure to wait 1 hour or more after initial ink charge. Printout before ink charge stabilization will not provide adequate drawing quality.	【ぎ Operation manual
		(6) Is steel belt tension adjusted to specification?	ÅEAdjust steel belt tension.	上置7.5 Steel Belt Tension Adjustment
		(7) Check if CR_ENC assembly and T fence contact with each other.	ÅEIf they contact with each other, adjust CR_ENC assembly and T fence positions. ÅEIf problem remains even after position adjustment, replace CR_ENC assembly and T fence.	Replacing T Fence LT 4.7.3 Replacing CR_ENC Assembly
		(8) Is nozzle face wiped correctly?	ÅEClearly wipe it away using a wiper.	Caronical Operation manual
		(9) Is registered head voltage different from actual head voltage?	ÅEEnter correct head voltage.	下5.5.2 Voltage Input Menu
		(10) Is head assembly damaged?	ÅEReplace damaged head assembly.	工管 4.6.2 Replacing Head Assembly
		(11) SUB board assembly may be malfunctioning.	ÅEReplace SUB board assembly	【實 4.3.1 Replacing SUB Board Assembly
		(12) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
16	Mixed color lines are not overlaid.	(1) Is steel belt tension adjusted to specification?	ÅEAdjust steel belt tension.	T\$ 7.5 Steel Belt Tension Adjustment
		(2) Is registered head voltage different from actual head voltage?	ÅEEnter correct head voltage.	L置 5.5.2 Voltage Input Menu
		(3)Is head inclination inappropriate?	ÅEAdjust head inclination.	T 7.7 Head Accuracy Adjustment
		(4) Are two-way printing positions aligned correctly?	ÅEAlign two-way printing positions.	X 5.5.5 Two- Way Printing Position Alignment Menu
		(5) Is CW adjustment inappropriate?	ÅEPerform CW adjustment.	工管 5.5.6 CW Adjustment Menu
17	Black and other colors do not align.	(1) Check if CR_ENC assembly and T fence contact with each other.	ÅEIf they contact with each other, adjust CR_ENC assembly and T fence positions. ÅEIf problem remains even after position adjustment, replace CR_ENC assembly and T fence.	Replacing T Fence Fence Fence Fence CR_ENC Assembly
18	Poor accuracy of segment length in head travel direction (main scan direction).	(1) Is working environment appropriate?	ÅEUse machine under specified environment.	Conditions of the installation environment
		(2) Is steel belt tension adjusted to specification?	ÅEAdjust steel belt tension.	LE 7.5 Steel Belt Tension Adjustment
		(3) Is T fence dirty?	ÅEClean T fence. ÅEIf T fence is still dirty or damaged, replace T fence.	工資 4.5.5 Replacing T Fence
		(4) Internal process of MAIN board assembly may be abnormal.	ÅEInitialize parameters and reenter or modify them. Then, check machine operation again.	Parameter Initialization Menu
19	Poor linearity in head travel direction (straightness)	(1) Is PF belt tension adjusted to specification?	ÅEAdjust PF reduction belt tension.	Tension Adjustment
		(2) Does pressure roller drag when pressure arm is raised?	ÅEIf pressure roller collects paper dust on itself, wipe dust away using a wet soft cloth.	Operation manual

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
20	Poor accuracy of segment length in paper feed direction (sub scan direction)	(1) Is working environment appropriate?	ÅEUse machine under specified environment.	Conditions of the installation environment
		(2) Have you performed distance correction with paper in use?	ÅEPerform distance correction.	下 5.5.7 Band Feed Correction Menu
		(3) Is PF driving pulley loose	ÅEReplace PF motor assembly.	12 4.4.1 Replacing PF Motor Assembly
		(4) Is PF belt tension adjusted to specification?	ÅEAdjust PF reduction belt tension.	Reduction Belt Tension Adjustment
		(5) Does pressure roller drag when pressure arm is raised?	ÅEIf pressure roller collects paper dust on itself, wipe dust away using a wet soft cloth.	Coperation manual
		(6) Is rough surface of grid roller partially worn out? (7) Is grid roller rotation heavy? Does rattling occur when it rotates?	If grid roller is contaminated with paper dust, clean roller with a nylon brush.	La Operation manual
21	Poor linearity in paper feed direction (paper splicing accuracy)	(1) Is registered head voltage different from actual head voltage?	ÅEEnter correct head voltage.	又更 5.5.2 Voltage Input Menu
		(2) Adjust head inclination.	ÅEAdjust head inclination.	TT 7.7 Head Accuracy Adjustment
		(3) Is steel belt tension adjusted to specification?	ÅEAdjust steel belt tension.	To 7.5 Steel Belt Tension Adjustment
		(4) Are two-way printing positions aligned correctly?	ÅEAlign two-way printing positions.	X 5.5.5 Two- Way Printing Position Alignment Menu
		(5) Is T fence dirty?	ÅEClean T fence. ÅEIf T fence is still dirty or damaged, replace T fence.	12 4.5.5 Replacing T Fence
		(6) Is CR cursor assembly loose?	ÅEReplace CR cursor assembly.	工資 4.7.5 Replacing CR Cursor Assembly

Table 9-10 Symptoms, Check Items and Actions for Drawing Problems (Continued)

No.	Symptom	Check item	Action	Reference
22	Poor right angle accuracy	(1) Does pressure roller drag when pressure arm is raised?	ÅEIf pressure roller collects paper dust on itself, wipe dust away using a wet soft cloth.	CP Operation manual
		(2) Is rough surface of grid roller partially worn out? (3) Is grid roller rotation heavy? Does rattling occur when it rotates?	If grid roller is contaminated with paper dust, clean roller with a nylon brush.	CF Operation manual

9.3.4 Noise Problems

Table 9-11 Symptoms, Check Items, and Actions for Noise Problems

No.	Symptom	Check item	Action	Reference
1	S	(1) Are there any foreign objects or obstacles at noisegenerating position?	ÅERemove obstacles and foreign objects.	-

Table 9-11 Symptoms, Check Items, and Actions for Noise Problems (Continued)

No.	Symptom	Check item	Action	Reference
2	Abnormal noise is heard while head is moving laterally.	(1) Does customer recognize ink discharge noise as abnormal noise?	ÅEExplain machine operations.	-
		(2) Is abnormal noise caused by loose screw in covers?	ÅEAdditionally tighten screws.	【資 4.2 Removal of Covers
		(3) Is rattling noise head when moving carriage laterally?	ÅERemove dust from carriage bearing and roller runner. After cleaning roller runner, always apply thin lubricant film over its surface using a grease-sprayed cloth.	译4.7.5 Replacing CR Cursor Assembly
		(4) Is abnormal noise heard from CR cable?	ÅERemove twists from CR cable. ÅEIf abnormal noise sounds from between steel bearer and tube guide, replace tube guide.	Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(5) Check if CR_ENC assembly and T fence contact with each other.	ÅEIf they contact with each other, adjust CR_ENC assembly and T fence positions. ÅEIf problem remains even after position adjustment, replace CR_ENC assembly and T fence.	Replacing T Fence Fence Fence Fence CF 4.7.3 Replacing CR_ENC Assembly
		(6) Is abnormal noise heard from CR driven pulley bearing?	ÅEReplace CR driven pulley.	工管 4.5.6 Replacing CR Driven Pulley
		(7) Is steel belt tension adjusted to specification?	ÅEAdjust steel belt tension.	T 7.5 Steel Belt Tension Adjustment
		(8) Is abnormal noise heard from CR motor assembly?	ÅEReplace CR motor assembly.	12 4.5.2 Replacing CR Motor Assembly
3	Abnormal noise is heard during paper feeding.	(1) Is PF reduction belt slipping between pulleys?	ÅEReplace PF reduction belt.	12 4.4.1 Replacing PF Motor Assembly
		(2) Is abnormal noise heard from PF motor assembly?	ÅEReplace PF motor assembly.	工資 4.4.1 Replacing PF Motor Assembly
		(3) Is rough surface of grid roller partially worn out? (4) Is grid roller rotation heavy? Does rattling occur when it rotates?	ÅEIf grid roller is contaminated with paper dust, clean roller with a nylon brush.	EFOperation manual

9.3.5 Online Function Problem

Table 9-12 Symptoms, Check Items, and Actions for Online Function Problems

No.	Symptom	Check item	Action	Reference
1	Centronics interface cannot establish communication.	(1) Does an alternative cable also cause the same error?	ÅECommunication error may be caused by an open circuit in I/F cable or too long cable length. Make sure to use a spec. compliant cable.	-
		(2) Program ROM may be defective.	ÅEUpdate firmware.	工管7.4 Firmware Installation
		(3) MAIN board assembly may be malfunctioning.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
3	Scaling does not work correctly. Mirror function does not work	(1) Program ROM may be defective.	ÅEUpdate firmware.	下7.4 Firmware Installation
4	correctly. Other functions do not work correctly.	(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
5	Drawing position is incorrect	(1) Is CW adjustment inappropriate?	ÅEPerform CW adjustment.	LF 5.5.6 CW Adjustment Menu
		(2) Program ROM may be defective.	ÅEUpdate firmware.	工管7.4 Firmware Installation
		(3) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-12 Symptoms, Check Items, and Actions for Online Function Problems (Continued)

No.	Symptom	Check item	Action	Reference
6 7	Some data are not printed (missing). Some data change to garbage.	(1) Program ROM may be defective.	ÅEUpdate firmware.	下了.4 Firmware Installation
		(2) Is T fence contaminated or worn?	ÅEIf grease or dust collect: Wipe fence with a dry cloth. ÅEIf ink deposit present: Wipe it with cloth dampened in small amount of jet wash and then wipe with a dry cloth. ÅEIf contamination or deposit is too heavy: Replace T fence.	Replacing T Fence
		(3) Check "Encoder: PF" from "Test: Encoder" of self-diagnosis function.	ÅEIf NG, check MAIN board assembly connector JI32. ÅEReplace T fence. ÅEReplace CR_ENC assembly. ÅEReplace CR motor. ÅEReplace CR_BASE board assembly. ÅEReplace CR tape wire.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly LF 4.5.5 Replacing T Fence LF 4.5.2 Replacing CR Motor Assembly LF 4.7.2 Replacing CR_BASE Board Assembly and CR_HEAD Board Assembly LF 4.5.7 Replacing Steel Bearer, Tube Guide, CR Tape Wire, and Intake Tube
		(4) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

Table 9-12 Symptoms, Check Items, and Actions for Online Function Problems (Continued)

No.	Symptom	Check item	Action	Reference
8	Paper feed after printout is excessive.	(1) Program ROM may be defective.	ÅEUpdate firmware.	下7.4 Firmware Installation
		(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly

9.3.6 Other Problems

Table 9-13 Symptoms, Check Items, and Actions

No.	Symptom	Check item	Action	Reference
1	Machine hangs up.	(1) Internal process of MAIN board assembly may be abnormal.	ÅEInitialize parameters and reenter or modify them.	工管 7.3 Parameter Backup
		(2) MAIN board assembly may be damaged.	ÅEReplace MAIN board assembly.	Replacing MAIN Board Assembly, DIMM, MOTHER Board Assembly, HDD_MOTHER Board Assembly
2	Machine power is shut off	(1) Is power cable shorted?	ÅECheck by a circuit tester.	-
	during drawing.	(2) Electric leak?	ÅECheck for short to chassis ground due to damaged cable insulation.	-

10 APPENDIX

10.4	Exploded Views/Service Parts List	10-3
10	.3.1 Required Tools	10-2
10.3	Jig and Tool List	10-2
10.2	Wiring Diagram	10-1
10.1	Introduction	10-1

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10 Appendix

10.1 Introduction

This chapter provides referential information such as service data and exploded views.

10.2 Wiring Diagram

10.3 Jig and Tool List

This section provides lists of jigs and tools required for service operations.

10.3.1 Required Tools

(1) Tools for part replacement

Table 10-1 Tools for Part Replacement

No.	Tool	Tool Part code			
1	Philips driver No.2	Generic product	Shaft length should be 250mm or more.		
2	Philips driver No.2	Generic product	Shaft length should be 50mm or less.		
3	Philips driver No.1	Generic product			
4	Flat-head driver	Generic product			
5	Ratchet	Generic product			
6	Pliers	Generic product			
7	Tweezers	Generic product			
8	Hexagon wrench set	Generic product			

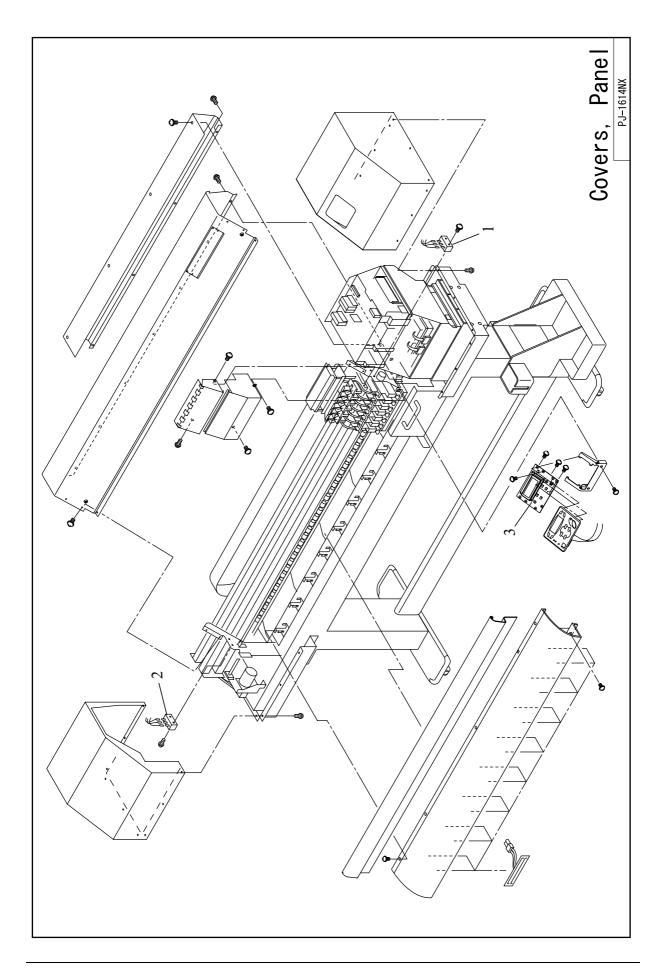
(2) Tools for adjustment

Table 10-2 Tools for Adjustment

No.	Tool	Part code	Remark
1	Personal computer	Generic product	
2	Tension gauge	Generic product	Max. capacity should be 4000g.
3	Tension gauge	Generic product	Max. capacity should be 500g.
4	Y-axis tension attachment	JD-42050	
5	Flash memory card	Generic product	Spec.: 4MBFlash Memory Card Type-II(PCMCIARel.2.1/JEIDAVer.4.2)
6	Marking film	(TBD)	For adjusting drawing accuracy
7	Straight scale (1000mm)	Generic product	
8	PF_ENC locating jig	(TBD)	
9	Platen height adjusting jig	(TBD)	

10.4 Exploded Views/Service Parts List

This section includes the exploded views of respective units and service parts list.



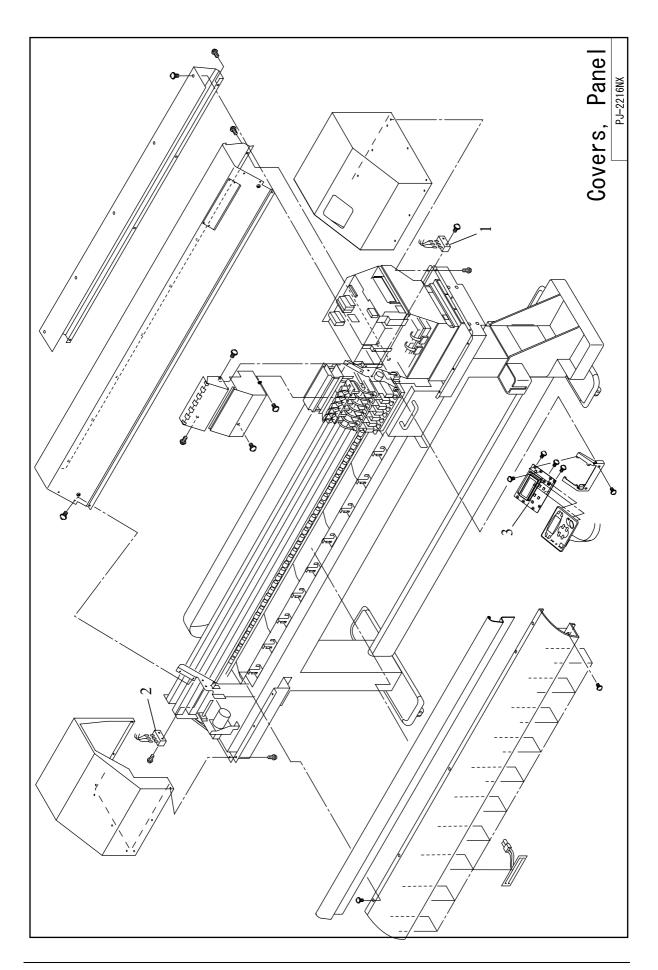
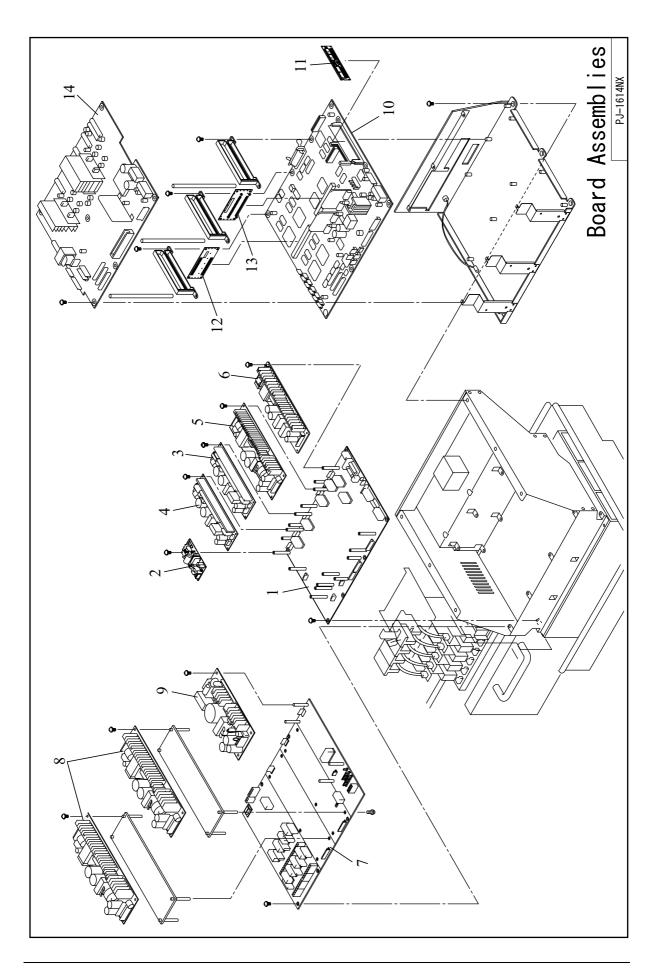


Table 10-3 Cover Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	Cover R sensor assembly	DF-42443		1	
2	Cover L sensor assembly	DF-42444		1	

Table 10-4 Panel Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
3	PANEL board assembly	DE-35092		1	



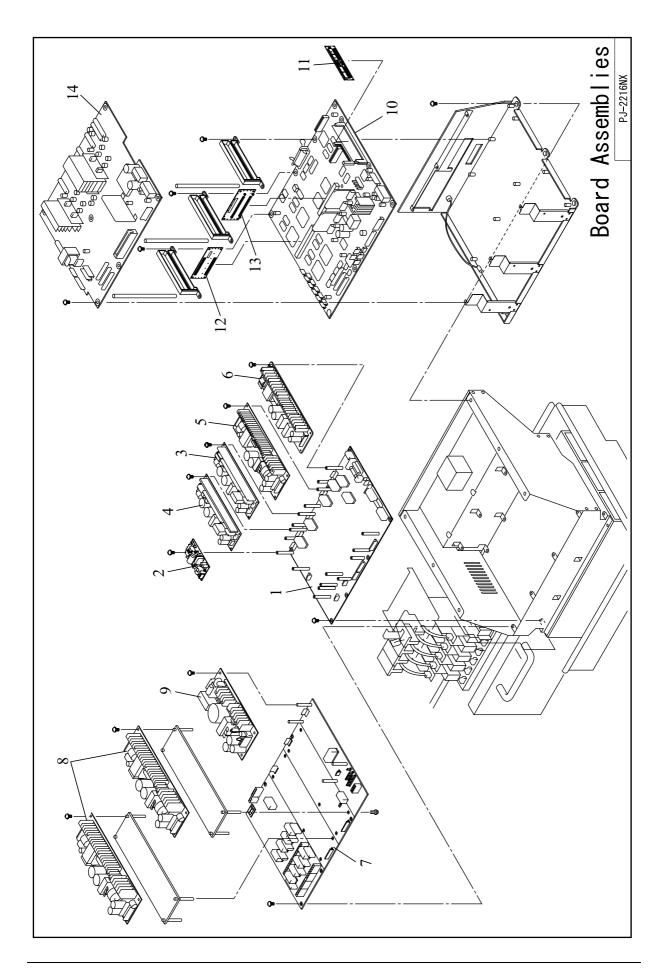
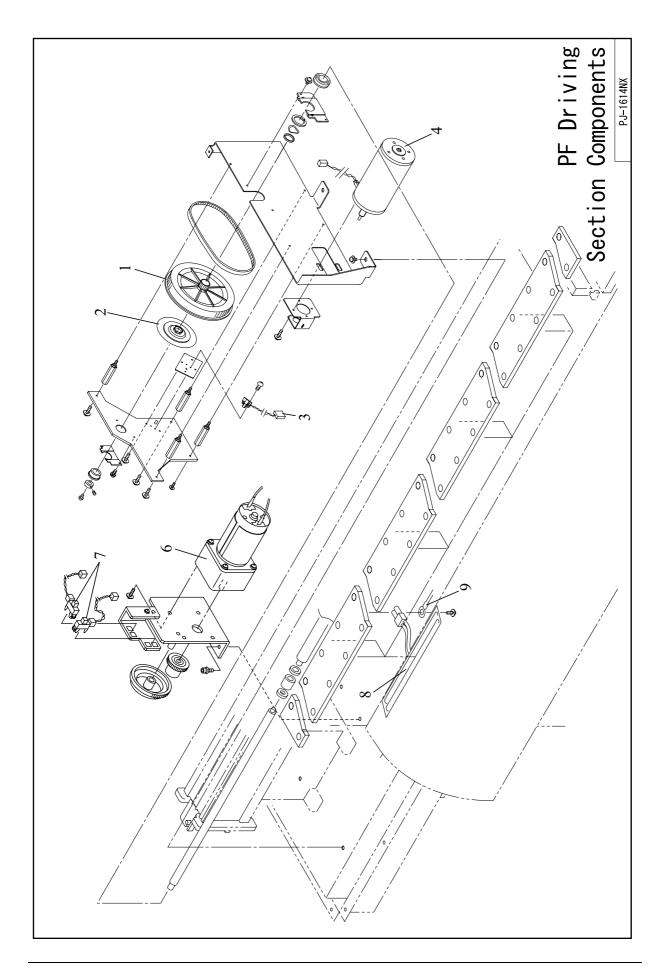


Table 10-5 Board Base Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	POWER-A board assembly	DE-35241		1	
2	Power supply 5V/5W	DF-43170		1	
3	Power supply 12V/50W	DF-43171		1	
4	Power supply 5V/50W	EA-47797		1	
5	Power supply 24V/150W	DF-43172		1	
6	Power supply 48V/75W	DF-43173		1	
7	POWER-B board assemblyy	DE-35242		1	
8	Power supply 48V/100W	DF-43174		2	
9	Power supply 24V/30W	DF-43175		1	
10	MAIN board assembly	DE-35234		1	
11	DIMM	DF-42303		1	
12	MOTHER board assembly	DE-48667		1	
13	HDD_MOTHER board assembly	DF-42518		1	
14	SUB board assembly	DE-35235		1	



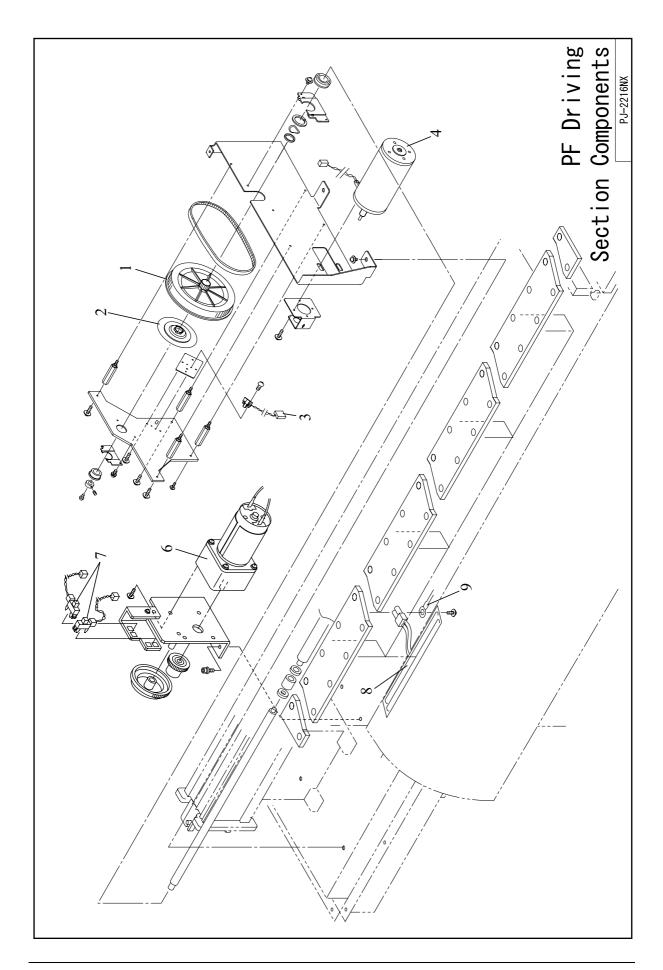
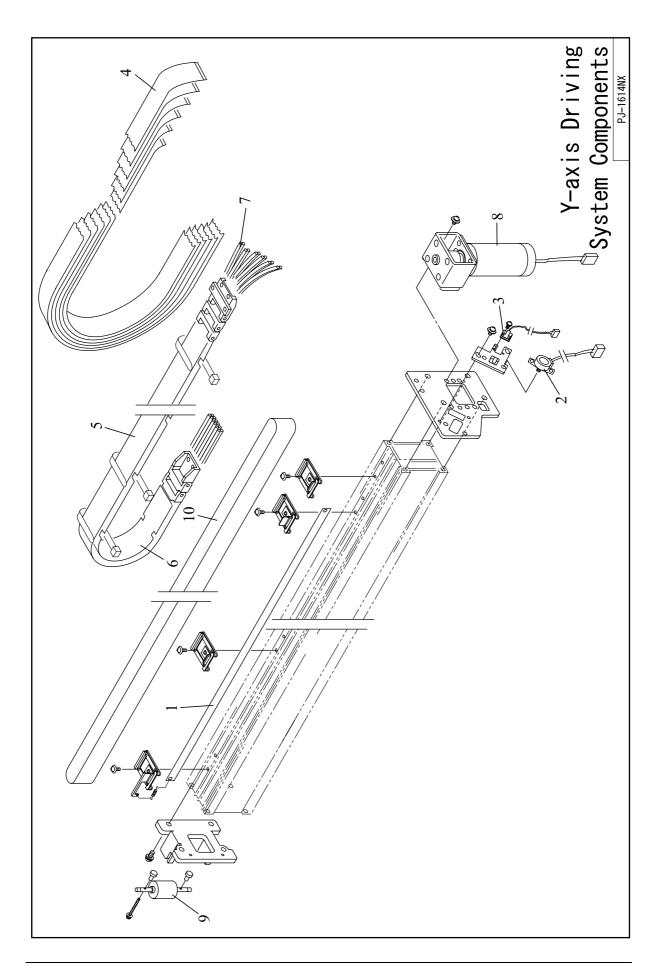


Table 10-6 PF Driving System

	T	1			T
No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	Reduction pulley	DE-35051		1	
2	PF scale assembly			1	
3	PF_ENC assembly	DF-42440		1	
4	CR motor assembly	DE-34087		1	
5	P_REAR_R sensor assembly	DF-42637		1	
6	Lever motor assembly	DE-35023		1	
7	Transmission type photo sensor	E-GP1S74P		3	
8	HeaterÅiPJ-1614NXEÅj	DE-35265		12	
8	HeaterÅiPJ-2216NXEÅj	DE-35265		16	
9	Thermister assemblyÅiPJ- 1614NXEÅj	EA-47711		6	
9	Thermister assemblyÅiPJ- 2216NXEÅj	EA-47711		8	



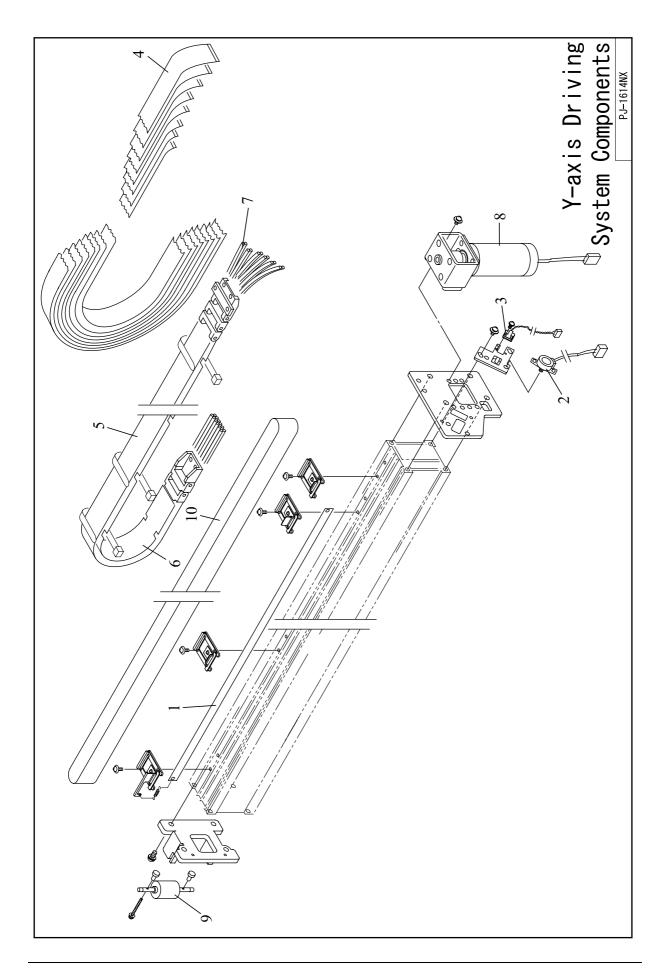
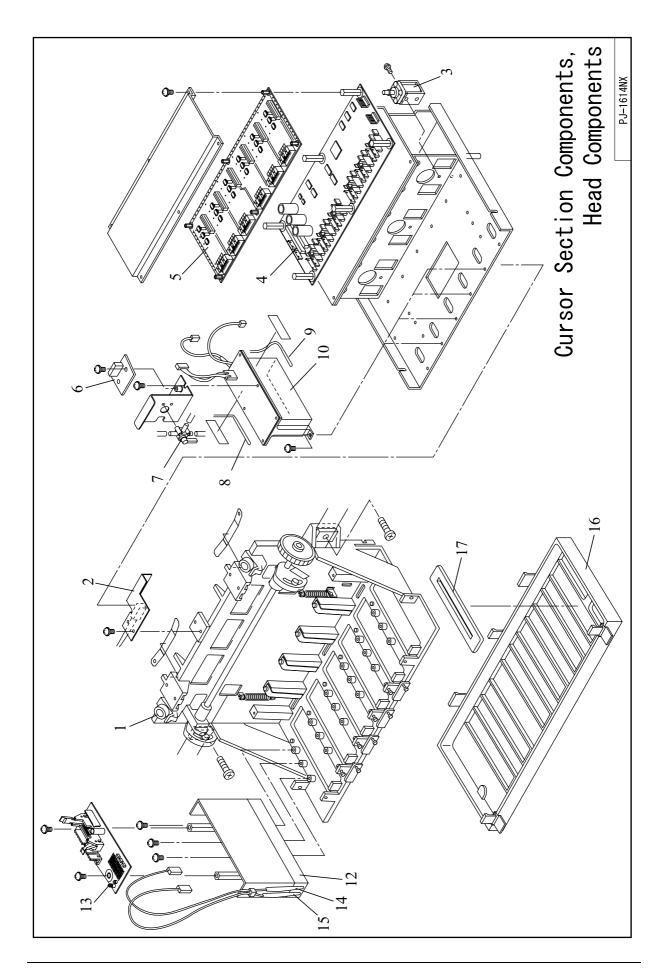


Table 10-7 CR Driving System

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	T fenceÅiPJ-1614NXEÅj	DE-35169		1	
1	T fenceÅiPJ-2216NXEÅj	DE-35170		1	
2	SLID motor assembly	DE-35228		1	
3	HD SLIDE sensor assembly	DF-42522		1	
4	CR tape wireÅiPJ-1614NXEÅj	DF-43125		6	
4	CR tape wireÅiPJ-2216NXEÅj	DF-43126		8	
5	Steel bearerÅiPJ-1614NXEÅj	DF-42879		1	
5	Steel bearerÅiPJ-2216NXEÅj	DF-42563		1	
6	Tube guideÅiPJ-1614NXEÅj	DE-35187		1	
6	Tube guideÅiPJ-2216NXEÅj	DE-35188		1	
7	Ink tubeÅiPJ-1614NXEÅj			8	
7	Ink tubeÅiPJ-2216NXEÅj			10	
8	Y-axis motor assembly	DE-35050		1	
9	CR driven pulley	DF-42559		1	
10	Steel beltÅiPJ-1614NXEÅj	DF-43271		1	
10	Steel beltÅiPJ-2216NXEÅj	DF-43325		1	



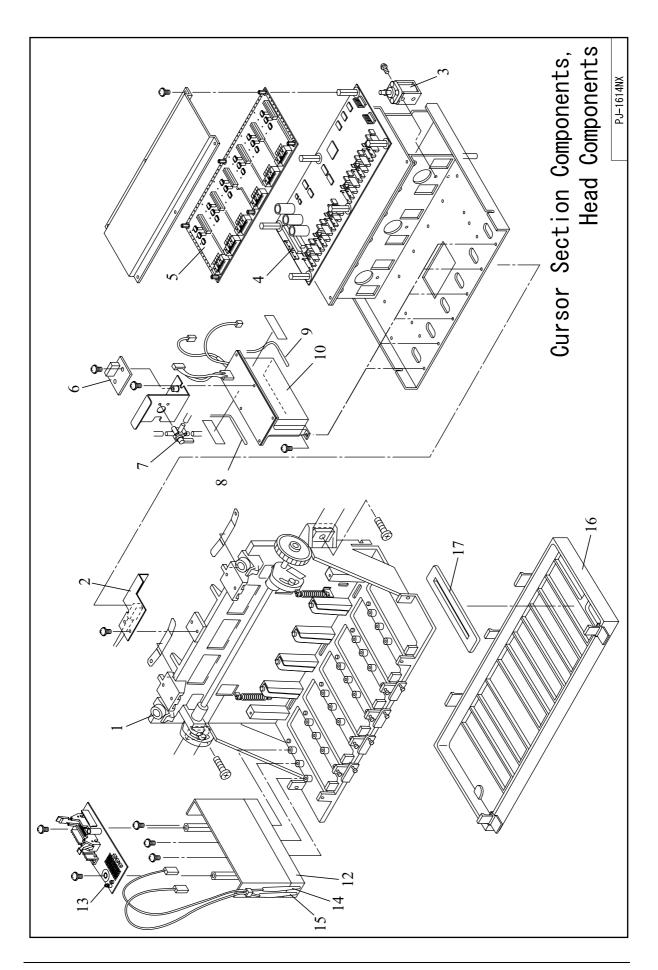
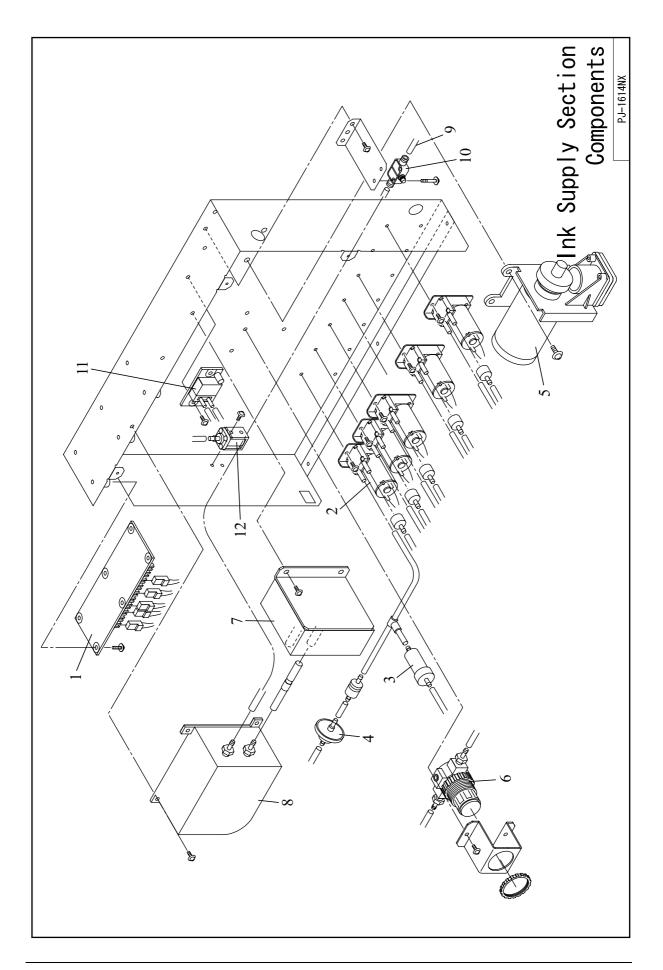


Table 10-8 Cursor Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	CR cursor assembly			1	
2	CR_ENC assembly	DF-42441		1	
3	Three-way valveÅiPJ-1614NXEÅj	DE-35276		4	
3	Three-way valveÅiPJ-2216NXEÅj	DE-35276		6	
4	CR_BASE board assembly	DE-35236		1	
5	CR_HEAD board assembly	DE-35237		1	
6	VALVE_SENSE board assemblyÅiPJ-1614NXEÅj	DE-35246		4	
6	VALVE_SENSE board assemblyÅiPJ-2216NXEÅj	DE-35246		6	
7	Three-way Valve(hand)ÅiPJ- 1614NXEÅj	DE-35262		4	
7	Three-way Valve(hand)ÅiPJ- 2216NXEÅj	DE-35262		6	
8	Cartridge heaterÅiPJ-1614NXEÅj	DF-43284		8	
8	Cartridge heaterÅiPJ-2216NXEÅj	DF-43284		12	
9	ThermisterÅiPJ-1614NXEÅj	DF-43285		8	
9	ThermisterÅiPJ-2216NXEÅj	DF-43285		12	
10	Sub tank assemblyÅiPJ-1614NXEÅj	DF-43279		4	
10	Sub tank assemblyÅiPJ-2216NXEÅj	DF-43279		6	

Table 10-9 Head Bracket Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
11	P_EDGE sensor assembly	DF-43182		1	
12	Head assemblyÅiPJ-1614NXEÅj			4	
12	Head assemblyÅiPJ-2216NXEÅj			6	
13	Head board assemblyÅiPJ- 1614NXEÅj	DE-35238		4	
13	Head board assemblyÅiPJ- 2216NXEÅj	DE-35238		6	
14	Cartridge heaterÅiPJ-1614NXEÅj			4	
14	Cartridge heaterÅiPJ-2216NXEÅj			6	
15	ThermisterÅiPJ-1614NXEÅj			4	
15	ThermisterÅiPJ-2216NXEÅj			6	
16	CappingÅiPJ-1614NXEÅj	DE-21691		1	
17	Cap spongeÅiPJ-1614NXEÅj	DF-43299		4	
17	Cap spongeÅiPJ-2216NXEÅj	DF-43299		6	



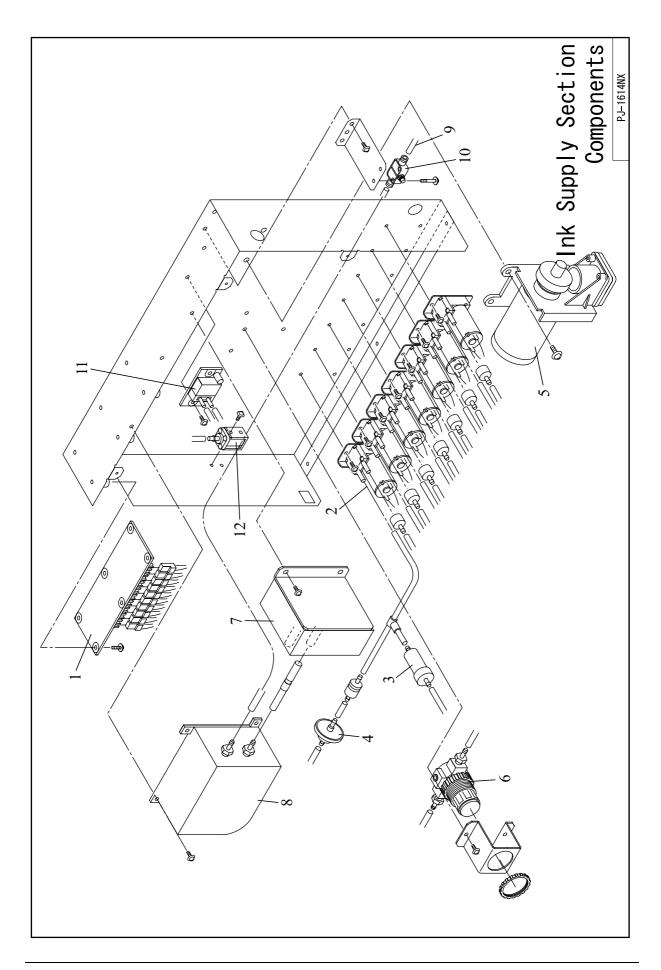
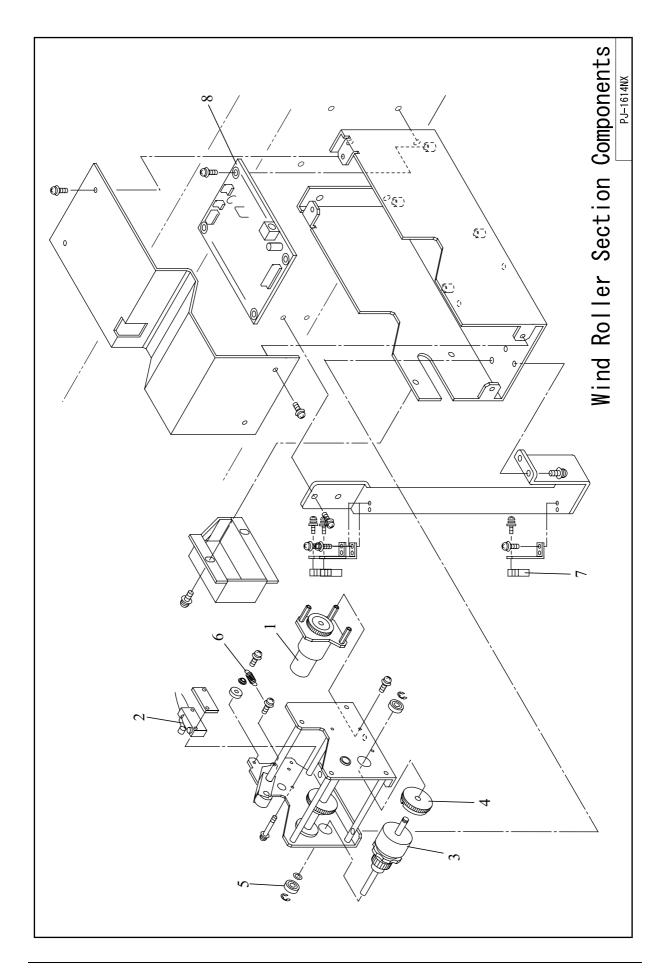


Table 10-10 Ink Supply Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	TERM_PUMP board assembly	DE-35239		1	
2	Ink pump assemblyÅiPJ-1614NXEÅj	DF-43233		5	
2	Ink pump assemblyÅiPJ-2216NXEÅj	DF-43233		7	
3	Safety valve holder assemblyÅiPJ- 1614NXEÅj	DE-35266		5	
3	Safety valve holder assembly ÅiPJ- 2216NXEÅj	DE-35266		7	
4	Ink filterÅiPJ-1614NXEÅj	DF-43288		6	
4	Ink filterÅiPJ-2216NXEÅj	DF-43288		8	
5	Air pump	DE-35268		1	
6	Regulator	DF-43253		1	
7	Bimor pump	DE-35269		1	
8	Air chamber	DE-35270		1	
9	Nipple	DF-43261		1	
10	Throttle valve	DF-43262		1	
11	PRESS_SENSE board assembly	DE-35248		1	
12	Two-way valve	DE-35271		1	



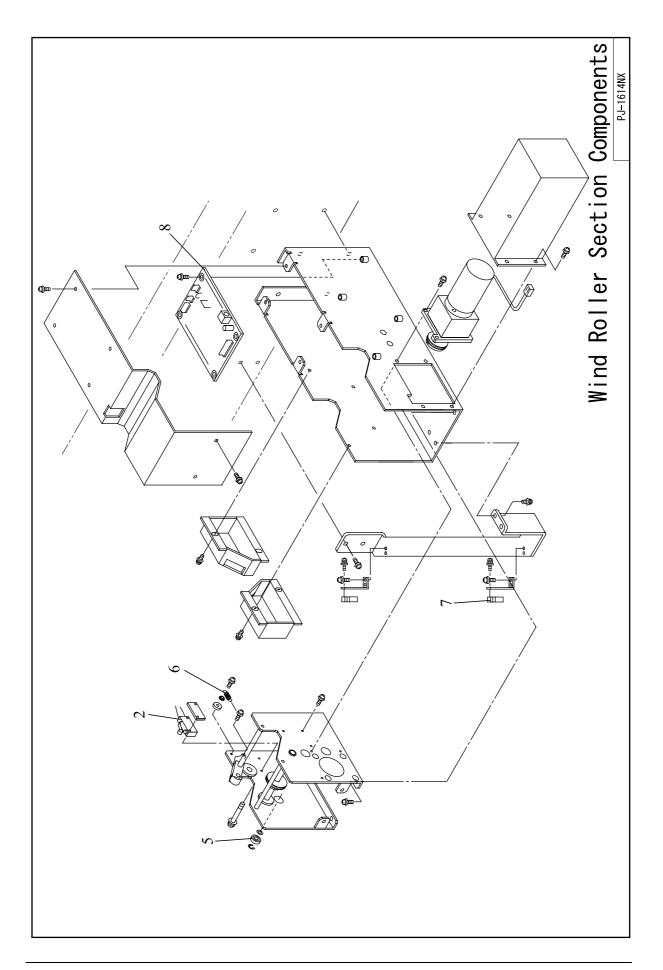


Table 10-11 Winding Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	Geared motorÅiPJ-1614NXEÅj	WN-4L940		1	
2	Winding switch assembly	EA-47720		1	
3	Limit gear	WN-4L487		1	
4	Mini keeper	E-MK12		1	
5	Snap	N-40197E		2	
6	Limit spring	WN-4L745		1	
7	Sensor assembly	DF-41253		1	
8	TERM_ROLL board assemblyÅiPJ- 1614NXEÅj	DE-35249		1	
8	TERM-ROLL board assemblyÅiPJ- 2216NXEÅj	DE-35249		2	

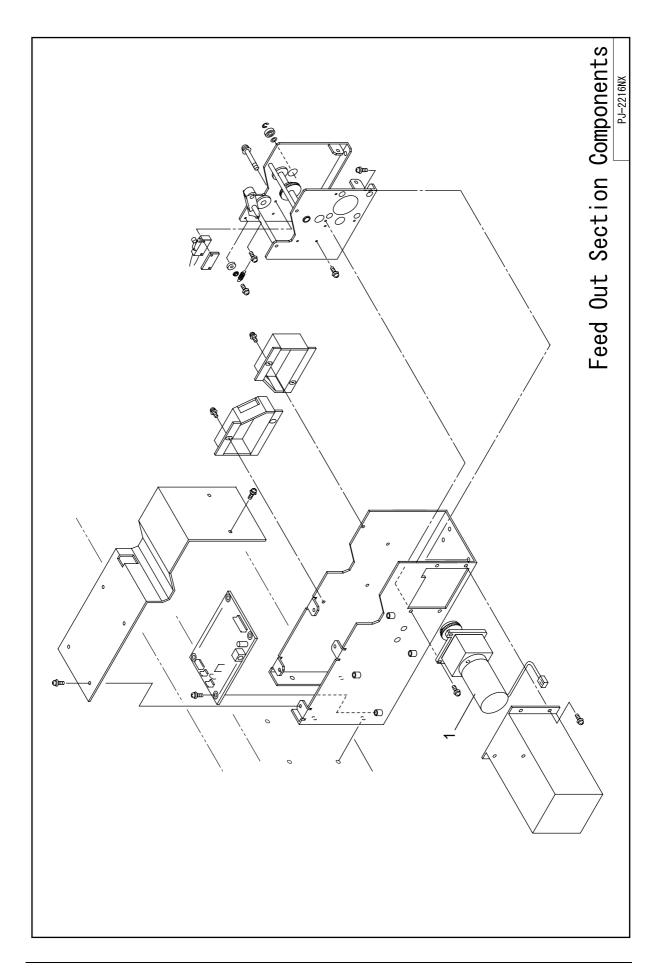
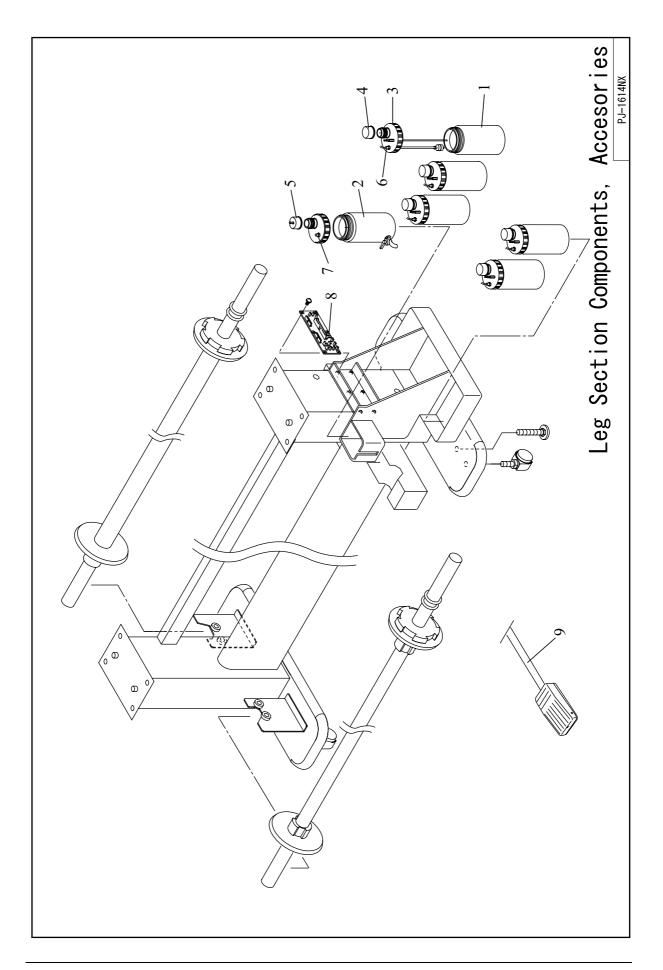


Table 10-12 Sending Section

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	Winding motorÅiPJ-2216NXEÅj	DE-35319		2	



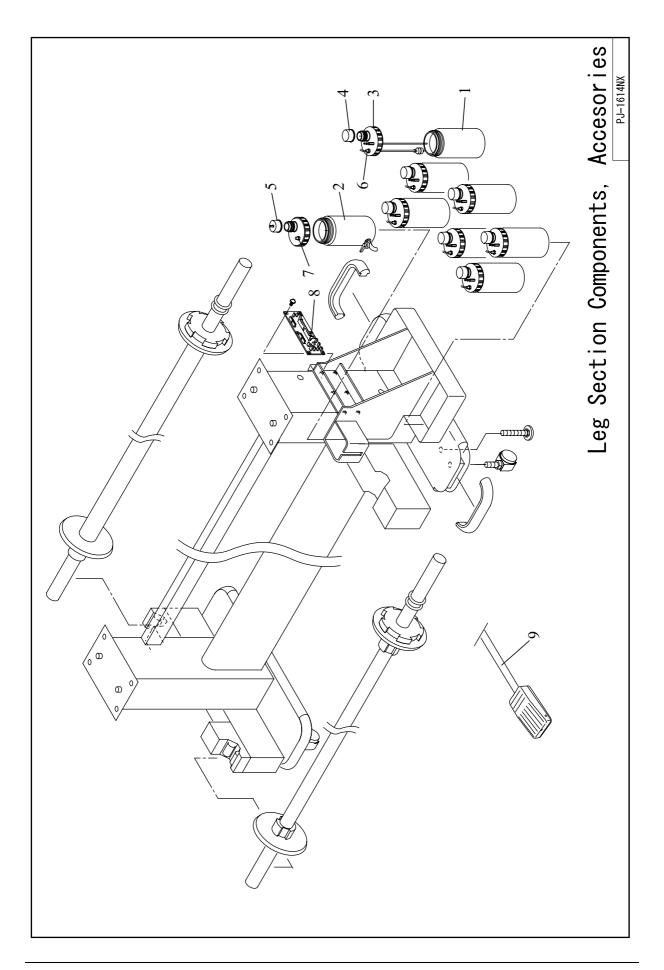


Table 10-13 Leg Section

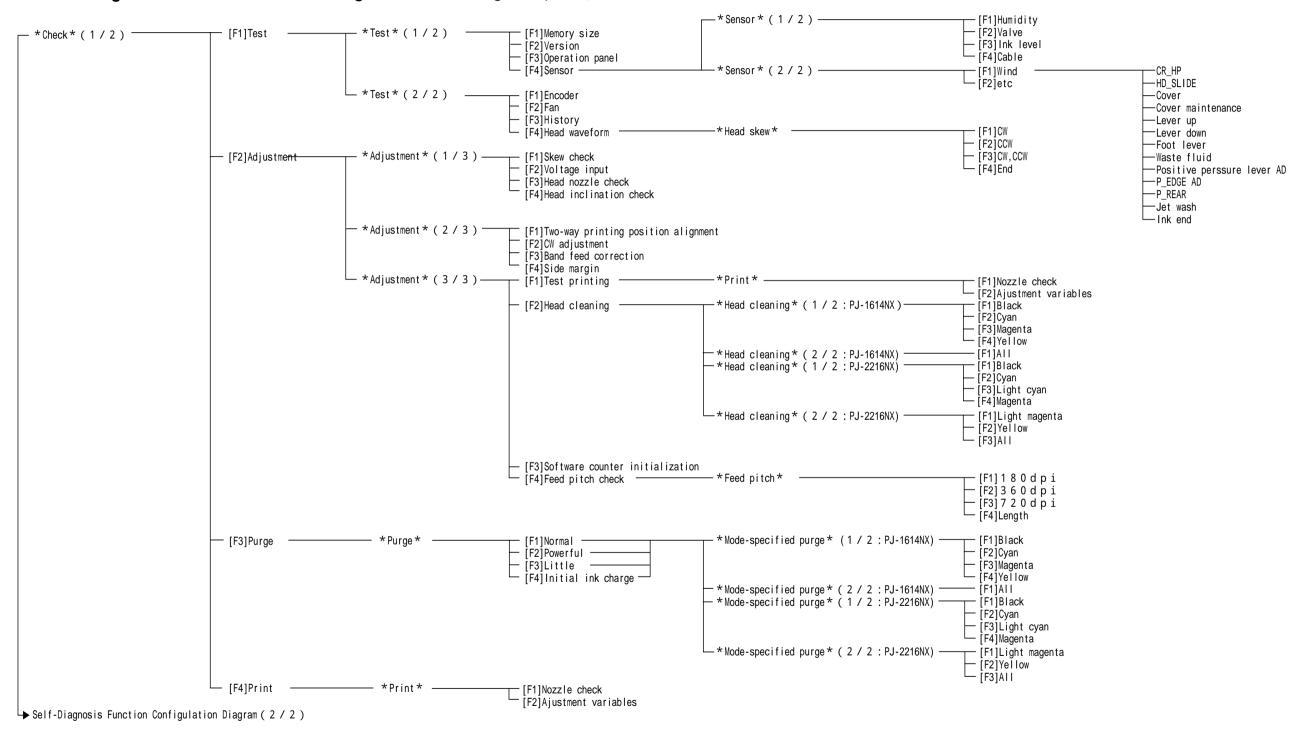
No.	Service part	Service diagram	Component part diagram	Qty.	Remark
1	Main bottleÅiPJ-1614NXEÅj	DF-43306		5	
1	Main bottleÅiPJ-2216NXEÅj	DF-43306		7	
2	Waste fluid bottle	DF-43307		1	
3	Bottle capÅiPJ-1614NXEÅj	DE-35283		6	
3	Bottle capÅiPJ-2216NXEÅj	DE-35283		8	
4	Ink capÅiPJ-1614NXEÅj	DF-43308		5	
4	Ink capÅiPJ-2216NXEÅj	DF-43308		7	
5	Waste ink cap	DF-43309		1	
6	Level switch (ink)ÅiPJ-1614NXEÅj	DF-43312		5	
6	Level switch (ink)ÅiPJ-2216NXEÅj	DF-43312		7	
7	Level switch (waste fluid)	DF-43313		1	
8	TERM_TANK board assembly	DE-35240		1	

Table 10-14 Accessory

No.	Service part	Service diagram	Component part diagram	Qty.	Remark
9	Foot switch assembly	DE-35131		1	

10 Appendix	PJ-1614NXE PJ-2216NXE Maintenance Manual

Self-Diagnosis Function Configulation Diagram(1/2)



Self-Diagnosis Function Configulation Diagram

Self-Diagnosis Function Configulation Diagram(2/2)

